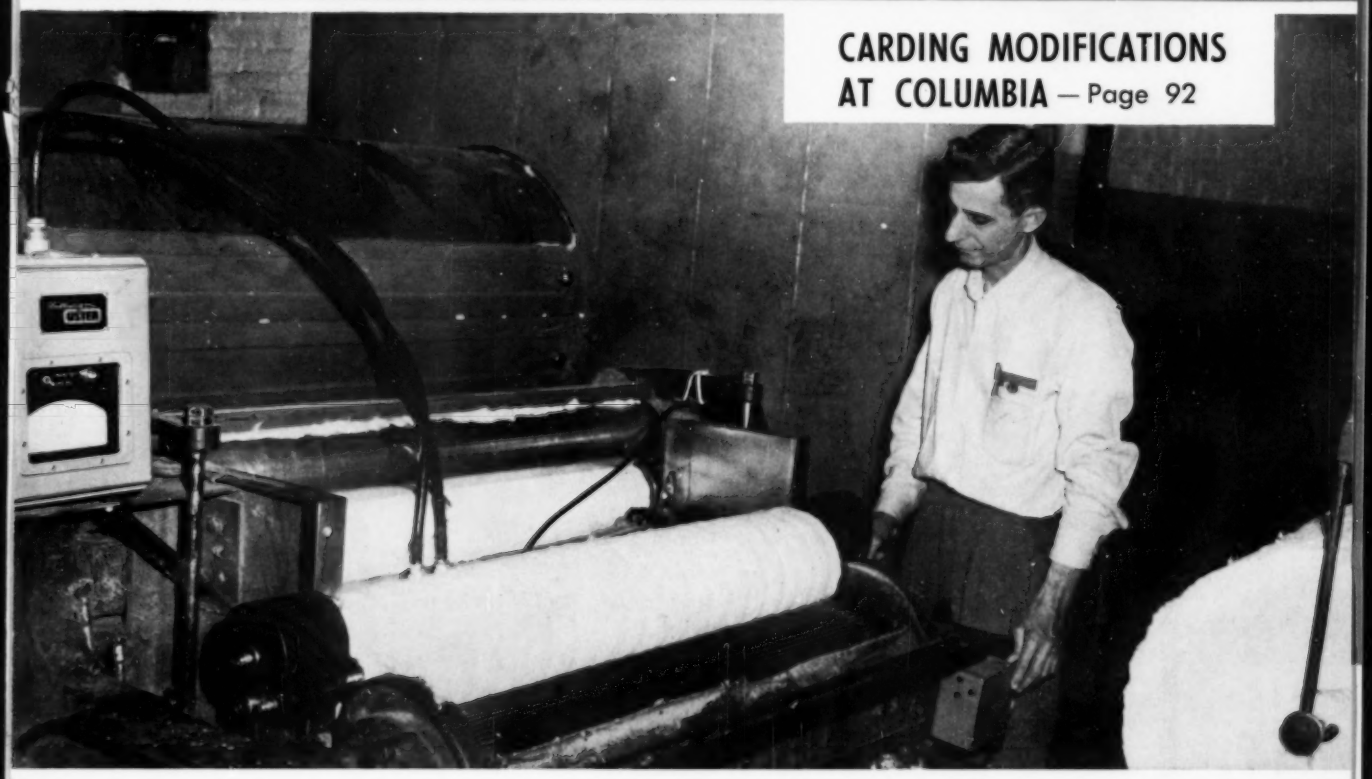
50 CENTS

Textile World

JUNE, 1956



CARDING MODIFICATIONS AT COLUMBIA — Page 92

ALSO IN THIS ISSUE:

Tariffs a Subsidy? (Editorial)... 79
What Supervisors Should Know About Labor Cost Control.... 83
Silk Preparation and Weaving.. 86
Silk Dyeing and Finishing..... 90
How Caron Runs High-Bulk Orlon 94
Fablok Mills' Raschel Nets..... 96
Getting the Most out of Paint.. 98
Carding, Spinning Synthetics... 101
Packaging Show Report..... 102
Convert Fiber Characteristics With These Nomographs.... 105
Loom-Battery Maintenance 106
How Sawyer Produces Vinyl-Coated Nylon 108
Tips To Reduce Twister Problems 110
How Woosley Keeps Hosiery Pull Threads Below 4%..... 112
Opening Room Serves Two Mills 114
Don't Forget Basic Loomfixing... 116
How To Dye, Finish Cotton Rugs 118
Knitted Fabrics Constantly Change at Carolina Corp.... 120
How One Mill Reorganized Carding and Spinning..... 122
Weaving Quality Jeans..... 124
Printing Cloth on Wallpaper Machines 126
Dyeing Stretch Hosiery..... 129
How Fiber Properties Influence Yarn Strength 133
Group Instruments for Better Control of Dyeing..... 207

A McGRAW-HILL PUBLICATION GREENVILLE, S. C. NEW YORK, N. Y.

If air conditioning is in your future

Proper temperature and humidity control play an important part in the manufacture of quality textile products.

Leading textile companies have found that Robert and Company Associates can provide expert guidance in setting up air conditioning systems which meet the highest standards of the industry. Our many years of designing and engineering all phases of textile mill operation have consistently helped our clients achieve higher production and quality.

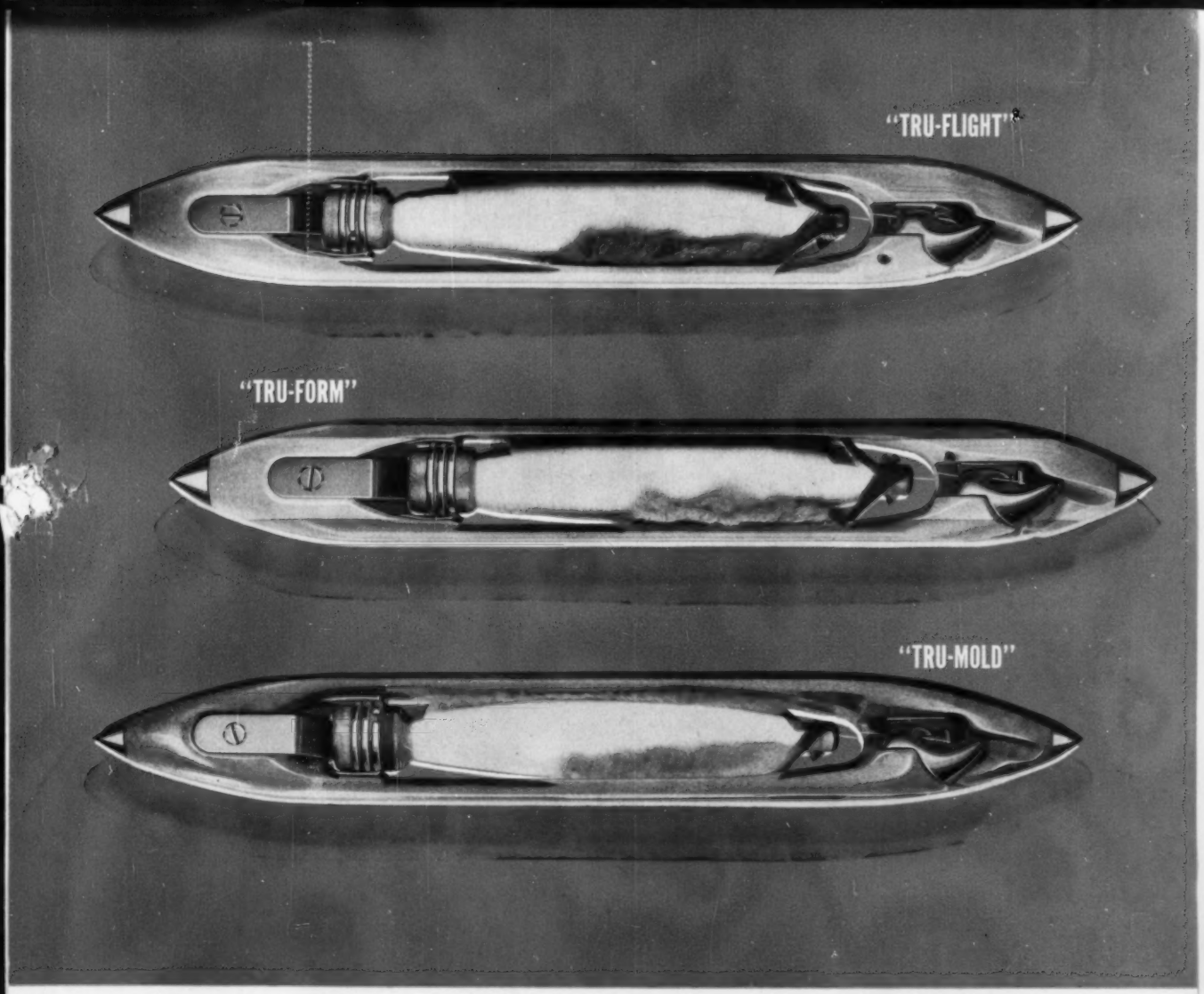
Whether your problem involves air conditioning, a more complex modernization program, or a streamlined new mill, we can assure you of service, coupled with knowledge and long experience, that will mean more profitable operation.

here's a good starting point

ROBERT AND COMPANY ASSOCIATES
Textile Engineering Division
ATLANTA

Serving the Great Names in Textiles for Over 40 Years

Alabama Mills, Inc.
American Bemberg Corp.
Cabin Crafts, Inc.
Chicopee Manufacturing Corp.
Cluett Peabody & Co., Inc.
Crompton Company
Crystal Springs Bleachery
Davenport Hosiery Mills
Dixie Mercerizing Co.
Fieldcrest Mills, Inc.
B. F. Goodrich Company
The Goodyear Tire and Rubber Company
James Lees & Sons Company
Mt. Vernon-Woodberry Mills, Inc.
Muscogee Manufacturing Co.
Peerless Woolen Mills (A Division of Burlington Industries, Inc.)
Pepperell Manufacturing Co.
Southern Bleachery and Printworks, Inc.
Standard-Coosa-Thatcher Co.
J. P. Stevens & Co.
Swift Manufacturing Co.
Swift Spinning Mills
The Springs Cotton Mills
Thomaston Mills
United Merchants and Manufacturers Co., Inc.
West Point Manufacturing Co.



REDUCE WEAVING COSTS WITH DRAPER SHUTTLES

Longer shuttle life and *reduced maintenance* are two distinct ways in which Draper shuttles aid in lowering weave room costs. The desire to furnish a shuttle that will meet exactly the conditions under which the mill plans to use it has resulted in the manufacture of a wide variety of Draper shuttles.

"TRU-FLIGHT", "TRU-FORM", and "TRU-MOLD" shuttles incorporate the finest in materials and design. From all-dogwood to the completely new molded construction, each is engineered to offer *greater shuttle economy* and *improved loom operation.*

Lower *your* weaving costs . . . standardize on Draper shuttles, today.

DRAPER CORPORATION

HOPEDALE, MASS.

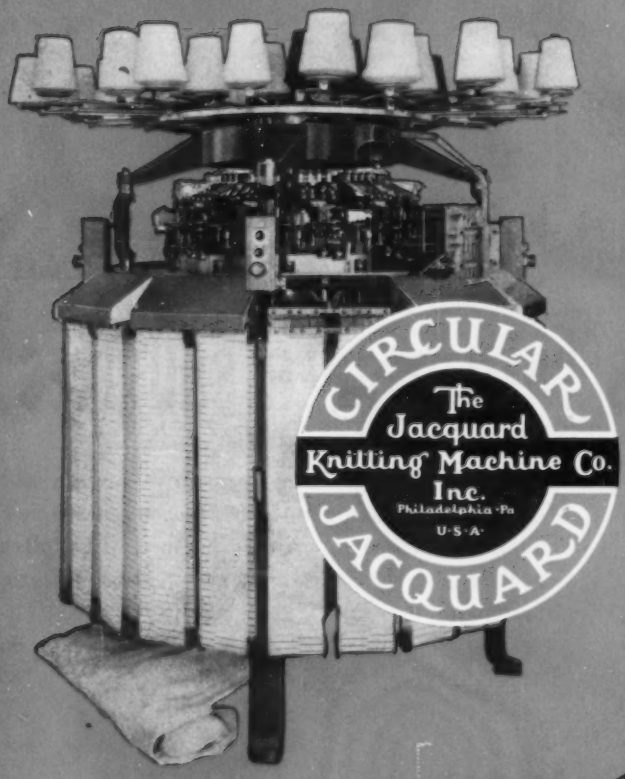
ATLANTA, GA.
GREENSBORO, N. C.
SPARTANBURG, S. C.

only "CIRCULAR JACQUARD" offers Unlimited Pattern Designs

No other circular knitting machine has the pattern range of the Circular Jacquard TJI-12. Fully automatic, the TJI-12 offers the largest selection of knitted fabrics in either synthetic or natural fiber yarns.

Knit-on cuffs are a quality feature and pattern cards permit any design, regardless of width, length or placement. Special cams allow interlocked fabrics without jacquard pattern cards.

Twelve feeds for maximum production and cuts up to 14 needles per inch *with single needle control* make the TJI-12 the most versatile knitting machine in the Outerwear field today.



the world's largest manufacturers of circular jacquard knitting machines

JACQUARD KNITTING MACHINE CO., INC. Philadelphia 24, Pa.

Textile World

PUBLISHED MONTHLY

A McGRAW-HILL PUBLICATION

Member of Associated Business Publications and Audit Bureau of Circulations

Edwin D. Fowle....Publisher

Greenville Staff

Prentice M. Thomas.....*Editor-in-Chief*
Richard B. Pressley.....*Associate Editor*
James H. Blore.....*Associate Editor*
William G. Ashmore.....*Associate Editor*
Robert W. Pinault.....*Assistant Editor*
Wilmer C. Westbrook.....*Assistant Editor*

New York Staff

Louise E. Wilie.....*Managing Editor*
Gloria J. Meeks.....*Editorial Assistant*
Carl C. Cerminaro.....*Art Director*

E. H. Halliwell.*Contributing Editor (New England)*
H. S. Knowlton.....*Contributing Editor (Boston)*
John Wilhelm.....*World News Editor*
George B. Bryant, Jr....*Chief, Washington Bureau*
Dexter Keezer.....*Economics Director*

Consulting Editors

C. Norris Rabold.....*Finishing*
Francois E. Cleyn.....*Worsted Spinning*
Gustav Zellnik.....*Woolen Spinning*
Eugene P. Schremo.....*Weaving*
William A. Newell.....*Textile Research*
W. A. Thomason, Jr.....*Cotton Yarn*

Business Department

Donald H. White.....*Advertising Sales Manager*
Thomas Macaluso..*Business & Production Manager*
Howard J. Bernard.....*Research and Promotion*

Executive, Advertising, and Subscription Offices: 330 W. 42nd Street, New York 36, N. Y. Editorial Office: 201 E. Coffee St., Greenville, S. C. Publication Office: 99-129 N. B'way, Albany, N. Y.

DONALD C. McGRAW, President.
PAUL MONTGOMERY, Executive Vice President.
HENRY G. LORD, Vice President.
JOSEPH A. GERARDI, Vice President and Treasurer.
JOHN J. COOKE, Secretary.
NELSON BOND, Executive Vice President, Publications Division.
RALPH B. SMITH, Vice President and Editorial Director.
JOSEPH H. ALLEN, Vice President and Director of Advertising Sales.
J. E. BLACKBURN, JR., Vice President and Circulation Director.

DISTRICT OFFICES:
BOSTON 16, Ralph L. Chisholm, Dist. Mgr., 350 Park Square Bldg.
CHICAGO 11, Richard N. McKelvey, Dist. Mgr., 520 North Michigan Ave.
NEW YORK 36, John G. Sabella, Dist. Mgr., 330 W. 42nd St.
PHILADELPHIA 3, H. C. Harvey, Dist. Mgr., Architects Building, 17th and Sansome Sts.
CLEVELAND 15, Richard H. Burke, Dist. Mgr., 1510 Hanna Building.
GREENVILLE, S. C., Walter C. McMickle, Dist. Mgr., 201 E. Coffee St., Greenville, S. C.
WASHINGTON 4, National Press Building.
OTHER OFFICES: Atlanta 3; Dallas 1; Detroit 26; Los Angeles 14; St. Louis 8; Pittsburgh 22; San Francisco 4; London E.C. 4; Paris 7; Bonn; Rio de Janeiro; Buenos Aires; Mexico City; Manila; Tokyo; Bombay; Melbourne E. 4; Toronto 4.

Contents copyright 1956 by McGraw-Hill Publishing Co., Inc. (All rights reserved)

Table of Contents

JUNE • 1956
Volume 106 Number 6

KEYED ACCORDING TO READER INTEREST

DEPARTMENTS

Book Reviews	176
Calendar	228
Developments To Watch	4
Editorial	79
Equipment and Supply News	137
Kinks and Short-Cuts	155
Mill Maintenance	208
New Dyes and Chemicals	150
New Literature	170
News About Men	244
News About Mills	236
News About Suppliers	230
Obituary	250
Pointers for Supervisors	135
Questions and Answers	153
Reader Service	169
Round Table	8
Advertisers' Index	263

Feature Articles

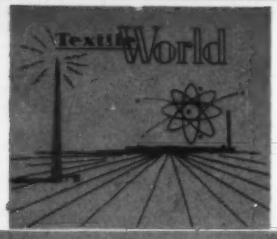
SPINNER	WEAVER	KNITTER	FINISHER	ENGINEER			COTTON	SYNTHETICS	WOOL
y	W	K	F	E	TARIFFS a Subsidy? (Editorial)	79	C	S	W
y	W	K	F	E	What Supervisors Should Know About LABOR COST CONTROL	83	C	S	W
y	W		F		SILK Preparation and Weaving	86	C	S	W
			F		SILK Dyeing and Finishing	90		S	
y				E	CARDING Modifications at Columbia	92	C		
y					How Caron Runs HIGH-BULK ORLON	94		S	W
	W	K½			Fablok Uses New Ideas for RASCHEL NETS	96		S	
				E	How To Get the Most out of PAINT	98	C	S	W
y					How Ora Cards and Spins SPUN SYNTHETICS	101	C	S	
y	W	K	F	E	PACKAGING SHOW Report	102	C	S	W
y					Converting FIBER CHARACTERISTICS	105	C	S	W
	W				LOOM-BATTERY Maintenance	106	C	S	W
			F		How Sawyer Produces VINYL-COATED NYLON	108		S	
y					Pointers To Reduce TWISTER Problems	110	C	S	W
		K			How Woosley Keeps PULL THREADS Below 4%	112		S	
y					New OPENING ROOM Serves Two Mills	114	C		
	W				Don't Forget BASIC LOOMFIXING	116	C	S	W
			F		How To Dye and Finish COTTON RUGS	118	C		
		K			Carolina Corp.'s KNITTED FABRICS	120	C	S	W
y					Reorganized CARDING and SPINNING	122	C		
	W				Weaving Quality JEANS	124	C		
			F		PRINTING CLOTH on Wallpaper Machines	126	C	S	W
		K	F		Dyeing Methods for STRETCH HOSIERY	129		S	
y					How Fiber Properties Affect YARN STRENGTH	133	C		
			F		Group INSTRUMENTS To Control Dyeing	207	C	S	W

Equipment and Supply News

y	W	K			Automatic WINDERS	137	C	S	W
y	W	K			Automatic YARN INSPECTOR	138		S	
			F		SAMPLE-DYEING Machine	138	C	S	W
	W				Wide-Carpet LOOMS	138	C	S	W
	W	K			PILE-FABRIC Machine	140	C	S	W
			F		Automatic CUTTING MACHINE	140	C	S	W
y	W	K	F	E	SPECTROPHOTOMETER	142	C	S	W
y					Twin-Sliver DRAWING	142	C	S	
y					Cotton SPINNING FRAME	144	C		
	W				SLASHER Without a Dryer	144		S	
	W				Belting LOOMS	146	C	S	W
			F		CLOTH-WASHING Machine	146	C	S	W
			F	E	Finishing-Plant TRUCKS	148	C	S	W
y					STRETCH-YARN Machine	148		S	
			F		INSPECTION MACHINE	148	C	S	W

Kinks and Short-Cuts

		K			How To Knit Loose TRICOT Fabrics	155		S	
	W				LOOM-WEIGHT Stands Keep Room Orderly	156	C	S	W
y	W	K	F	E	COUNTER on Conveyor Checks Shipments	156	C	S	W
	W				Preassembled CRANKSHAFTS Cut Downtime	158	C	S	W
y					Motors Help Clean SPINNING-ROOM Floor	158	C	S	W
y	W	K			Unravel WASTE HOSIERY To Save Yarn	160		S	W
	W				MODIFIED LOOM Weaves 1,200-Yd. Rolls	160	C	S	W
		K			Keeping LINT Off Machines	162	C	S	W
	W				Odd Yarn Makes PICKER-ROD BUMPERS	162	C	S	W
				E	DIVIDING GAUGE Speeds Center Punching	162	C	S	W
	W				Repaired TEMPLE CAPS Reduce Jerk-Ins	164	C	S	W
		K			Signal System Aids KNITTING Production	164	C	S	W
y					Modify TAPE TENSION To Save Tape	164	C	S	W
		K			Removing Shafts From HOSIERY MACHINE	166	C	S	W
				E	How To Renovate BROOMS and BRUSHES	166	C	S	W



Developments To Watch

LABELING OF FOREIGN IMPORTS . . . is being fought by importers and retailers. The opening gun for the merchants was fired by Patrick L. Ryan of the New York Board of Trade, who says, "Retailers cannot actually know the origin of all fabrics made into garments that they offer for sale. Labeling is a matter of Federal law."

There may be a real fight coming up between retailers and importers versus textile interests seeking to have state laws passed that would require stores to post signs stating that "Japanese Textiles Are Sold Here." Such a bill was passed in South Carolina and Alabama but failed to pass in Mississippi.

In South Carolina, it is reported that some of the signs are written in Japanese; other merchants are ignoring the whole thing. The Federal government, at least for the time being, is staying out of the hassle.

BETTER-QUALITY WOOL . . . will result from experiments at Britain's Wool Industries Research Association. Steam drying units have been designed that take into account the thermodynamic efficiency and the rate of water absorption. Less steam is used, and the wool is dried with less fiber entanglement. The result is an increase in good wool fiber because of the decrease in fiber breakage during carding. Also wool fabrics will dry more quickly.

A NEW ACRYLIC FIBER . . . less expensive than those now on the market, will be offered some time this year by Dow Chemical Co. Unnamed as yet, the fiber is said to have excellent properties of crease resistance, waterproofness, and durability.

GERMANY'S TEXTILE INDUSTRY . . . will show its greatest future gains in the production of synthetic-fiber fabrics, says the German Textile Association. The industry, consisting of 7,800,000 spindles and 212,000 looms, uses yearly about 65,000 tons of filament rayon and 115,000 tons of staple fiber. The expected increase in output is based on modernization plans, introduction and development of new fibers, and improvements in finishing techniques.

TEXTILE-GRADUATE SALARIES . . . are still well behind engineering salaries, according to the deans of some textile schools. The base pay for engineers with no experience or military service now is around $400 per month, compared with $385-plus last year.

Chemical companies are pretty well holding to $400 per month; oil companies are paying $435; the aviation industry is offering a $400 base but promises plenty of overtime at extra pay. A few textile concerns are offering up to $400, but the majority of graduates will start at well below this figure.

JAPANESE TEXTILE EXPORTS . . . in all major categories will increase in 1956, according to reports from Tokyo. Spun-rayon fabric exports are expected to increase 24% and filament-rayon cloth 11%. Cotton goods were not mentioned specifically.

Cloth exported to the United States must now meet rigid inspection standards because the U.S. is "Japan's most important customer," according to Taichiro Matsuo, a Japanese embassy official. He says that this action was taken in answer to American statements that cheap, lower-quality Japanese goods are underselling American products.

SWEATER IMPORTS . . . from Britain are declining, says Sidney S. Korzenik, executive director of the National Knitted Outerwear Association. However, Japanese sweater imports are increasing—45% in 1955 over the previous year.

GLAZED FABRICS . . . for the "Dresden Figurine Look" will be popular this season. Fabrics to be used by the high-fashion designers must resemble the surface of a delicate porcelain figurine. In demand will be plain and printed silk sheers, satins, shantungs, twills, satinized cottons, and organzas. Trimmings will include organdy, chiffon, voile, and lawn.

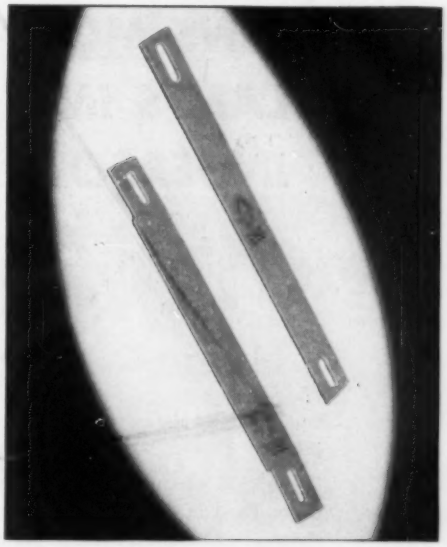
NYLON FLOOR COVERINGS . . . will have a wider range of textures as the result of a twist-setting process developed by Industrial Rayon Corp. The process can be applied to stock-dyed yarns as well as undyed yarns, and twist setting may be done while the yarn is being dyed on skeins or packages. The technique is suitable for both tufted and woven carpets.

KAPOK FELT . . . will be used in high-fidelity phonographs and television sets as a sound absorber. The felt, ¾ in. thick, can be applied easily with adhesive or tacks to inside cabinet walls; and it is said to absorb nearly all reflected or mechanical sounds that detract from the instrument's performance. The material was developed by American Felt Co.

CONTINUED ON PAGE 6

TEXTILE WORLD. Published monthly, with an additional issue in September, by McGraw-Hill Publishing Co., Inc. Executive, Advertising, and Subscription Offices: 330 W. 42nd Street, New York 36, N. Y. Editorial Office: 201 E. Coffee Street, Greenville, S. C. Publication Office, 99-129 North B'way, Albany 1, N. Y. Second-class mail privileges authorized at Albany, N. Y. **For subscriptions,** write to: TEXTILE WORLD Subscription Service, 330 West 42nd Street, New York 36, N. Y. **State company and position. Subscriptions are solicited only from executives, engineers, and technicians in textile manufacturing or finishing plants.** Single copies 50¢. United States and Possessions and Canada, $2 for 1 yr.; $3 for 2 yrs.; and $4 for 3 yrs. Other Western Hemisphere and the Philippines, $10 for 1 yr.; $16 for 2 yrs.; and $20 for 3 yrs. Other Countries, $15 for 1 yr.; $25 for 2 yrs.; and $30 for 3 yrs. Printed in USA. Annual index in Jan. issue.

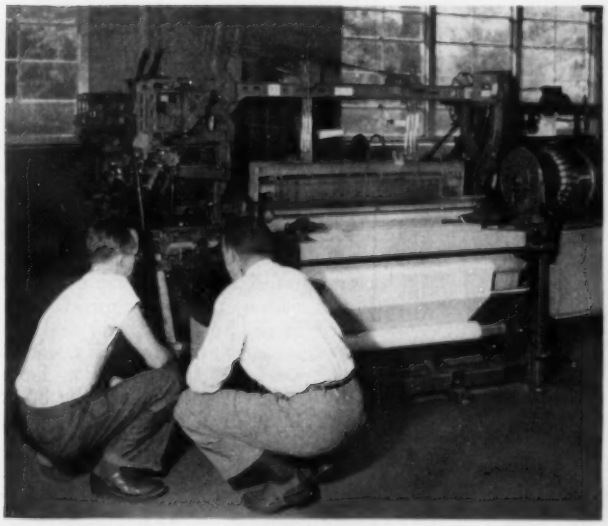
Tannate® special checks outperform all others by a wide margin....



When a Georgia Mill installed new X-2 Model Draper looms, they ran tests to determine which strap on the market would prove most economical for them to use. They ran the looms at 185 picks per minute, 120 hours per week. According to their records, which were kept very accurately during the test period, *Tannate Special Checks* outperformed all others by a wide margin.

One mill reported using one third the pounds of Tannate Special Check Straps as compared to the straps previously used. Another mill reported Tannate Special Checks averaging 6,000 loom hours, on 40″ E model Draper looms, running at 165 picks per minute. Still another reported, "We tried all kinds of straps in the past but Tannate Special Checks cut our strap costs by more than half."

A booklet giving highlights from several of the reports has been prepared by J. E. Rhoads & Sons. Free copies are available by simply writing J. E. Rhoads & Sons, 2100 W. 11th Street, Wilmington 99, Delaware.



more than a dozen mills report cutting strap costs in half

Twice the Life With Tannate Special

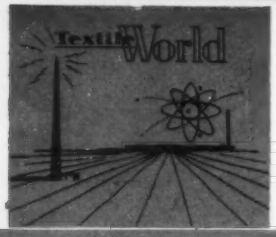
. . . This statement is not based on a few tests made on a limited number of looms out in some corner of some mill . . . it is based on the actual experience (reported to us during the past 8 years), of more than a dozen mills weaving all types of cloth on roughly 7,146 looms. They were comparing the performance of Tannate Special Checks with all makes and shapes of straps. Remember, Tannate Special Checks are sold in straight, curved, endless and patented Bi-Cut shapes, and under a money back guarantee if they don't outperform anything you've ever used before.

2100 W. 11th St., Wilmington 99, Del.

Atlanta • New York • Chicago

RHOADS

INDUSTRIAL LEATHERS



Developments To Watch

LABELING OF FOREIGN IMPORTS . . . is being fought by importers and retailers. The opening gun for the merchants was fired by Patrick L. Ryan of the New York Board of Trade, who says, "Retailers cannot actually know the origin of all fabrics made into garments that they offer for sale. Labeling is a matter of Federal law."

There may be a real fight coming up between retailers and importers versus textile interests seeking to have state laws passed that would require stores to post signs stating that "Japanese Textiles Are Sold Here." Such a bill was passed in South Carolina and Alabama but failed to pass in Mississippi.

In South Carolina, it is reported that some of the signs are written in Japanese; other merchants are ignoring the whole thing. The Federal government, at least for the time being, is staying out of the hassle.

BETTER-QUALITY WOOL . . . will result from experiments at Britain's Wool Industries Research Association. Steam drying units have been designed that take into account the thermodynamic efficiency and the rate of water absorption. Less steam is used, and the wool is dried with less fiber entanglement. The result is an increase in good wool fiber because of the decrease in fiber breakage during carding. Also wool fabrics will dry more quickly.

A NEW ACRYLIC FIBER . . . less expensive than those now on the market, will be offered some time this year by Dow Chemical Co. Unnamed as yet, the fiber is said to have excellent properties of crease resistance, waterproofness, and durability.

GERMANY'S TEXTILE INDUSTRY . . . will show its greatest future gains in the production of synthetic-fiber fabrics, says the German Textile Association. The industry, consisting of 7,800,000 spindles and 212,000 looms, uses yearly about 65,000 tons of filament rayon and 115,000 tons of staple fiber. The expected increase in output is based on modernization plans, introduction and development of new fibers, and improvements in finishing techniques.

TEXTILE-GRADUATE SALARIES . . . are still well behind engineering salaries, according to the deans of some textile schools. The base pay for engineers with no experience or military service now is around $400 per month, compared with $385-plus last year.

Chemical companies are pretty well holding to $400 per month; oil companies are paying $435; the aviation industry is offering a $400 base but promises plenty of overtime at extra pay. A few textile concerns are offering up to $400, but the majority of graduates will start at well below this figure.

JAPANESE TEXTILE EXPORTS . . . in all major categories will increase in 1956, according to reports from Tokyo. Spun-rayon fabric exports are expected to increase 24% and filament-rayon cloth 11%. Cotton goods were not mentioned specifically.

Cloth exported to the United States must now meet rigid inspection standards because the U.S. is "Japan's most important customer," according to Taichiro Matsuo, a Japanese embassy official. He says that this action was taken in answer to American statements that cheap, lower-quality Japanese goods are underselling American products.

SWEATER IMPORTS . . . from Britain are declining, says Sidney S. Korzenik, executive director of the National Knitted Outerwear Association. However, Japanese sweater imports are increasing—45% in 1955 over the previous year.

GLAZED FABRICS . . . for the "Dresden Figurine Look" will be popular this season. Fabrics to be used by the high-fashion designers must resemble the surface of a delicate porcelain figurine. In demand will be plain and printed silk sheers, satins, shantungs, twills, satinized cottons, and organzas. Trimmings will include organdy, chiffon, voile, and lawn.

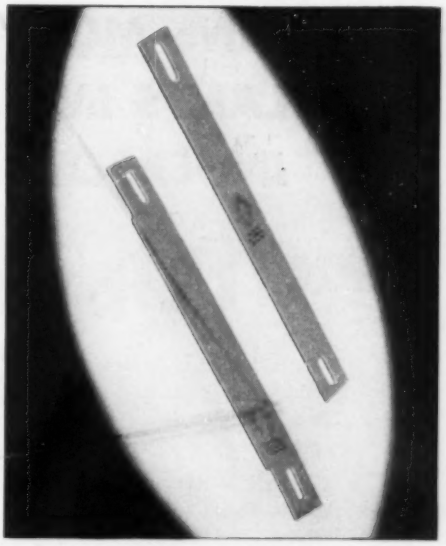
NYLON FLOOR COVERINGS . . . will have a wider range of textures as the result of a twist-setting process developed by Industrial Rayon Corp. The process can be applied to stock-dyed yarns as well as undyed yarns, and twist setting may be done while the yarn is being dyed on skeins or packages. The technique is suitable for both tufted and woven carpets.

KAPOK FELT . . . will be used in high-fidelity phonographs and television sets as a sound absorber. The felt, $\frac{3}{8}$ in. thick, can be applied easily with adhesive or tacks to inside cabinet walls; and it is said to absorb nearly all reflected or mechanical sounds that detract from the instrument's performance. The material was developed by American Felt Co.

CONTINUED ON PAGE 6

TEXTILE WORLD. Published monthly, with an additional issue in September, by McGraw-Hill Publishing Co., Inc. Executive, Advertising, and Subscription Offices: 330 W. 42nd Street, New York 36, N. Y. Editorial Office: 201 E. Coffee Street, Greenville, S. C. Publication Office, 99-129 North B'way, Albany 1, N. Y. Second-class mail privileges authorized at Albany, N. Y. **For subscriptions,** write to: TEXTILE WORLD Subscription Service, 330 West 42nd Street, New York 36, N. Y. **State company and position. Subscriptions are solicited only from executives, engineers, and technicians in textile manufacturing or finishing plants.** Single copies 50¢. United States and Possessions and Canada, $2 for 1 yr.; $3 for 2 yrs.; and $4 for 3 yrs. Other Western Hemisphere and the Philippines, $10 for 1 yr.; $16 for 2 yrs.; and $20 for 3 yrs. Other Countries, $15 for 1 yr.; $25 for 2 yrs.; and $30 for 3 yrs. Printed in USA. Annual index in Jan. issue.

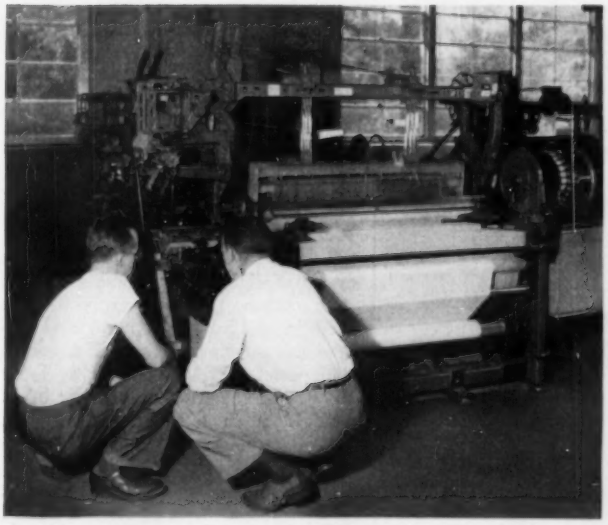
Tannate® special checks outperform all others by a wide margin....



When a Georgia Mill installed new X-2 Model Draper looms, they ran tests to determine which strap on the market would prove most economical for them to use. They ran the looms at 185 picks per minute, 120 hours per week. According to their records, which were kept very accurately during the test period, *Tannate Special Checks* outperformed all others by a wide margin.

One mill reported using one third the pounds of Tannate Special Check Straps as compared to the straps previously used. Another mill reported Tannate Special Checks averaging 6,000 loom hours, on 40" E model Draper looms, running at 165 picks per minute. Still another reported, "We tried all kinds of straps in the past but Tannate Special Checks cut our strap costs by more than half."

A booklet giving highlights from several of the reports has been prepared by J. E. Rhoads & Sons. Free copies are available by simply writing J. E. Rhoads & Sons, 2100 W. 11th Street, Wilmington 99, Delaware.



more than a dozen mills report cutting strap costs in half

Twice the Life With Tannate Special

. . . This statement is not based on a few tests made on a limited number of looms out in some corner of some mill . . . it is based on the actual experience (reported to us during the past 8 years), of more than a dozen mills weaving all types of cloth on roughly 7,146 looms. They were comparing the performance of Tannate Special Checks with all makes and shapes of straps. Remember, Tannate Special Checks are sold in straight, curved, endless and patented Bi-Cut shapes, and under a money back guarantee if they don't outperform anything you've ever used before.

2100 W. 11th St., Wilmington 99, Del.

Atlanta • New York • Chicago

RHOADS

INDUSTRIAL LEATHERS

HORSEPOWER

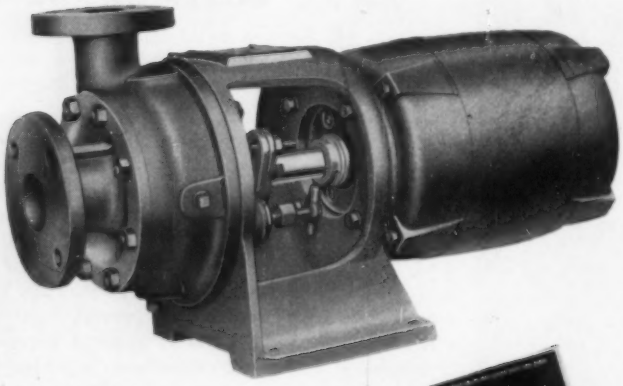
MEANS MORE TO THE PLANTS INSTALLING INGERSOLL-RAND

MOTOR PUMPS

It's a fact that the efficient I-R construction often enables you to use a smaller Motorpump to do the work usually demanded of pumps of greater horsepower!

So, I-R Motorpumps reduce your costs in several ways. First of all, in original cost. Save weight and space, too. Deliver more gallons-per-minute per horsepower used . . . and cut maintenance costs as well, because Motorpumps are built for longer, trouble-free service!

If you're not familiar with the famous I-R Motorpump line you'll do well to get full details right away.



The latest catalog gives complete data needed to choose a Motorpump . . . from ¼ to 75 hp, capacities 5 to 2800 gpm, heads to 650 ft. Write to:

Ingersoll-Rand

9-366 11 Broadway, New York 4, N. Y.

For more information, write direct or use Reader-Service post card.

DEVELOPMENTS TO WATCH

EL SALVADORAN TEXTILES . . . manufactured with the aid of Japanese capital and technicians, may soon hit world markets. A modern 25,264-spindle mill with 264 looms, the largest in Central America, will be completed in El Salvador in August. Half the capital was put up by Japanese investors associated with the Kureha Spinning Co. Ltd., which operates nine textile mills in Japan. The management says that the mill will produce Sanforized and fast-color cotton fabrics for domestic and foreign markets.

TARIFF CLASSIFICATIONS . . . probably will not be simplified until after further developments at the Geneva conference, which may affect over 1,000 products, including textile and apparel items. The Tariff Commission is seeking extension of its Sept. 1 deadline for taking action.

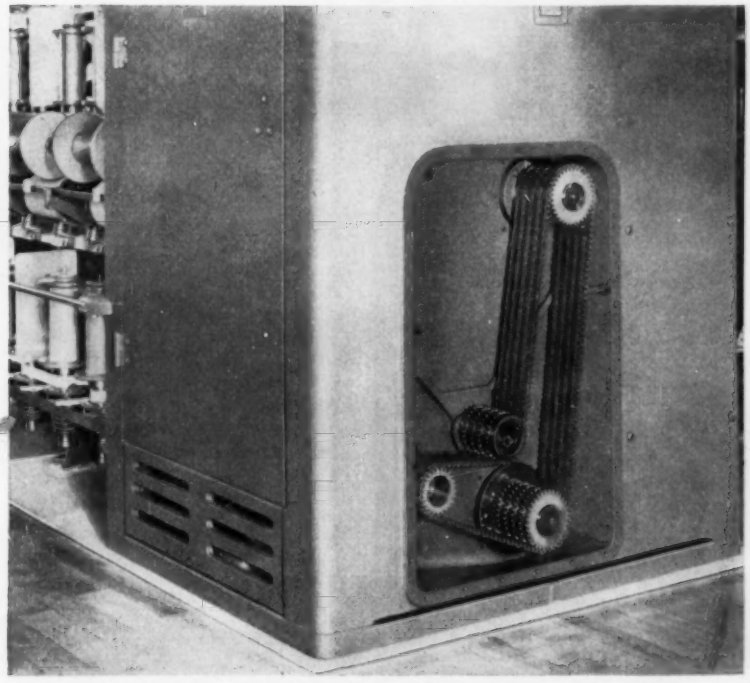
WOOL-CLOTH IMPORTS . . . were more than 6% of domestic production in 1955. The ad valorem duty, dropped to 25% in 1947, may be raised to 45% if efforts of the National Association of Wool Manufacturers succeed. A note, negotiated with other countries at Geneva in 1947, reserves the right to restore the duty to 45% when imports in a calendar year exceed 5% of the average domestic production of similar fabrics during the three preceding calendar years.

HIGH-BULK UNDERWEAR . . . may prove to be as popular as high-bulk outerwear. Made from blends of high-shrinkage Dynel staple blended with cotton, the new yarns will be used in children's sleepwear and underwear and in men's and women's underwear. Knitted with a loose stitch and fine yarns, the fabric bulks when dyed or finished.

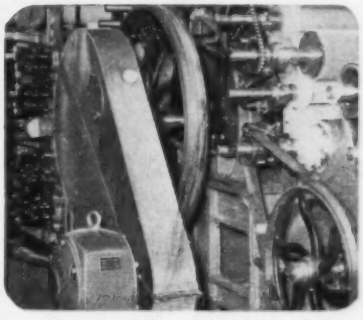
TRICOT FABRICS . . . are finding a new use in women's uniforms. Made of Arnel triacetate jersey, these uniforms can be hand-washed and drip-dried with little pressing.

HIGH-BULK STRETCH SOCKS? . . . The phenomenal success of high-bulk yarns in sweaters will spread to the hosiery business. Stretch-nylon yarns have been very successful in the

Here's the record of LINK-BELT silent chain



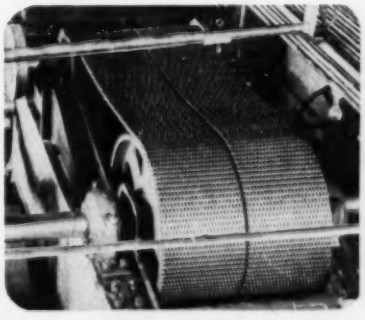
How do your drives compare?



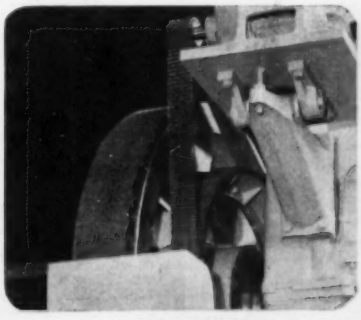
. . . REVERSE ROTATION OF SHAFTS. Link-Belt duplex silent chain — capable of driving from either side of chain — operates multiple shafts on this uptwister.

On fixed center drives, proper chain tension can be maintained with automatic or manual adjusters.

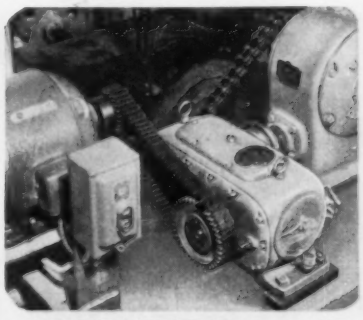
. . . UNDER ADVERSE OPERATING CONDITIONS. Humidity, heat, cold do not lower this chain's better than 98% efficiency.



. . . AT LARGE OR SMALL HP. A versatile line, these drives are available from fractional to thousands of hp.



. . . WITH LARGE RATIOS. Operates efficiently on extremely short centers at ratios as high as 10-to-1.



. . . IN LIMITED SPACE. Easy to assemble in close quarters, silent chain permits built-in drives, compact housings.

. . . AT HIGH SPEEDS. After 13 years on this newspaper press at speeds up to 4700 fpm, silent chain is still efficient.

For more details and advantages . . . for complete selection and technical data — ask your Link-Belt office or authorized stock-carrying distributor for a copy of 88-page Book 2425.

LINK-BELT

SILVERSTREAK SILENT CHAIN DRIVES

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World. 14,098

HARD, DIRT-RESISTANT Tennant-sealed floor needs only fast sweeping for daily care.

COMPARED WITH 5 YEARS AGO...

you now get brighter, cleaner floors at 1/2 the cost

When TENNANT introduced the dry-cleaning method years ago, it slashed previous textile floor maintenance costs to an all-time low.

But today, as a result of *important new improvements*, it does even more. It reduces average annual maintenance costs to about 50% of what they were just 5 years ago. And today's *tennantized* floors—as the photo shows—are far brighter . . . cleaner . . . more dirt-resistant than ever before. Some of them look like ballrooms!

New, Easy-to-Use Techniques Save Manhours

Here's why these new cost-saving results are possible:

1 Tennantized floors now need only 1/5 to 1/10 the former buffing, and about 50% as much labor-per-square-foot . . .

2 Improved Tennant materials last up to 4 times longer, stand up better under oil, moisture, dirt and traffic . . .

3 New techniques save time in problem areas such as humid weave rooms, in twisting, etc. *Ask for free, accurate estimate of savings your mill may expect.*

TENNANT
ESTABLISHED 1870

G. H. TENNANT CO.
2586 N. 2nd Street
Minneapolis 11, Minn.

FLOOR MAINTENANCE SYSTEM

For more information, write direct or use Reader-Service post card.

hosiery business. Why not marry the two fibers, and twist high-bulk Orlon or Acrilan around stretch-nylon yarn?

CONTINUED ON PAGE 192

Letters From Readers

THE HIGH COST OF LOW TARIFFS

Dear Editor:

We are a small business firm that has just been hurt by Japanese importation to this country.

A customer of ours, Kaybro Elastic Braid, of this city, who manufactures elastic braid primarily used for the manufacture of women's inexpensive, mass-produced undergarments, is no longer able to buy yarn from us because imported Japanese braid has just about ruined his business.

We are very much concerned, not so much for ourselves but primarily in the principle that such a thing can happen to a small firm such as my customer.

Because of the nature of his business, he belongs to no large trade association that can make pleas to the State Department and appeal in a group to his representatives in Congress. He has laid off help in his factory. He has worked for 21 years to build up a nice little business, and now he is at his wit's end.

On behalf of my customer and other small merchants, I ask, "What is he supposed to do—just stand by while his business life is ruined?"

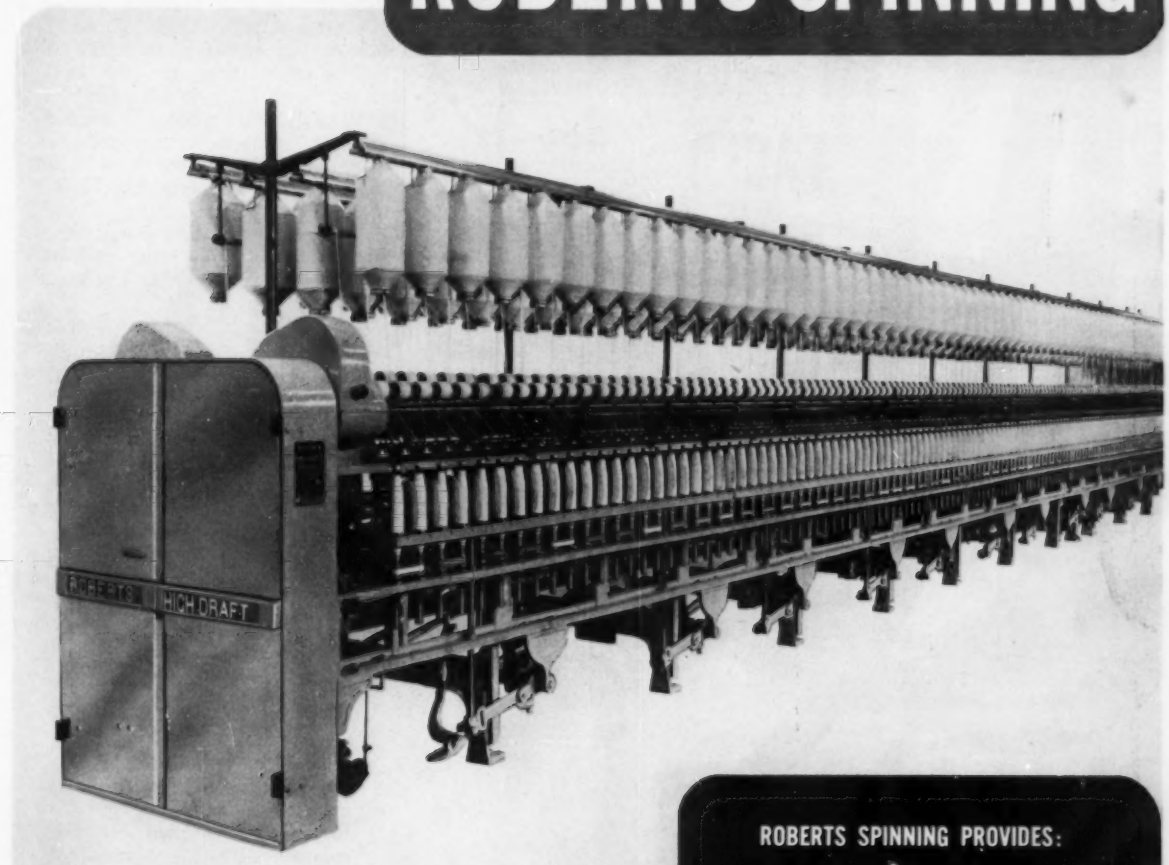
We all realize that we must help Japan keep strong to maintain our own strength and the strength of the free world. But what is a small business firm to do?

Will the government sit by and let him go out of business?

SIDNEY BERTNER
Sidney Bertner Co.
New York, N. Y.

CONTINUED ON PAGE 10

ROBERTS SPINNING



ROBERTS SPINNING PROVIDES:

- Better yarn quality
- Higher production per spindle
- Increased package sizes
- Lower maintenance expense
- Lowest first cost

COMPARE ALL 3

For high production, top yarn quality, large packages, low maintenance expense, dependability—and, at the lowest investment per spindle – Roberts Spinning is second to none in America today.

Available in 39 inch, 36 inch and the new Roberts 25 inch width Frames.

All standard features used on Roberts Spinning Frames can be adapted as Changeovers to your existing frames.

2 ¼ MILLION SPINDLES

In Changeovers and complete Frames–Roberts Spinning has been overwhelmingly accepted by American mills – over 2¼ million spindles now equipped with ROBERTS HIGH DRAFT.

ROBERTS COMPANY

SANFORD, NORTH CAROLINA

 For more information, write direct or use Reader-Service post card.

let us make a

Clipper *joint . . .*

for you

Are you looking for a better, faster way to fasten belts, aprons, tapes or ribbons? Would you like to slash maintenance time by putting an easy-to-fasten joint in endless belts? The fastest way to join these ends is with Clipper Hooks and Lacers.

Long used for lacing power transmission belting, Clipper fasteners are now proving their cost-cutting value in materials handling equipment, automatic pin setters, laundry equipment, food harvesting and processing equipment and in many other applications.

They produce a smooth, flexible joint in a hurry.

Let us demonstrate the advantages of a Clipper joint on the product of your choice. Send us a small sample (or the complete belt, apron, tape, or what have you) and we'll make you a Clipper joint FREE, without obligation.

Write, wire or call today for details and literature.

Ask your Industrial Distributor for Clipper Products

Clipper BELT LACER COMPANY

980 Front Ave., N. W., Grand Rapids 2, Michigan

WHO'S GETTING ALL THAT MONEY?

Dear Editor:

I was interested in your editorial "The Young-Man Hunting Season" [TEXTILE WORLD, April, '56, p. 81] because I'm one of those recent college graduates you say are being "lured" with fantastic job offers.

Who's kidding who? The so-called "average" salary for college graduates, engineers included, has been a lot lower than $349, much less $360 a month.

The same story was shoved down my throat and 1,000 other graduates of Georgia Tech in 1954. The actual truth runs like this:

Maybe three or four companies out of all the crowd are offering one or two jobs per company at $300+ salary—the lowest being, as you know, the textile mills, which offer glorious opportunities at $250 a month and down and you're placed in the card room for a "20-year intensive training program."

As far as the recruiting tactics are concerned, most companies—95%+—ended up interviewing 30 to 50 guys for *one* job that was open at their marvelous new warehouse in East Podunk, Kansas. You don't get paid, but the prestige sure is monumental.

M.L.G.

Pittsburgh, Pa.

[There seem to be at least three sides to this job story, depending on whether you're listening to college placement officers, companies trying to hire college graduates, or graduates themselves.

A number of prominent engineering colleges have just reported that the "average" salary being offered to the Class of '56 has now climbed to $389.

A large company that visited nine colleges this spring trying to hire "several" engineering seniors reported that it couldn't hire anybody because (1) it hadn't started recruiting soon enough (most of this year's crop was recruited last year) and (2) it wasn't prepared to pay $400 a month.

But two members of the Class of '55, with good records in a first-class engineering school, told TEXTILE WORLD *that there was no rush for their services and that the jobs they finally found for themselves paid "a lot less" than last year's "average" of $349.—*EDITOR*]*

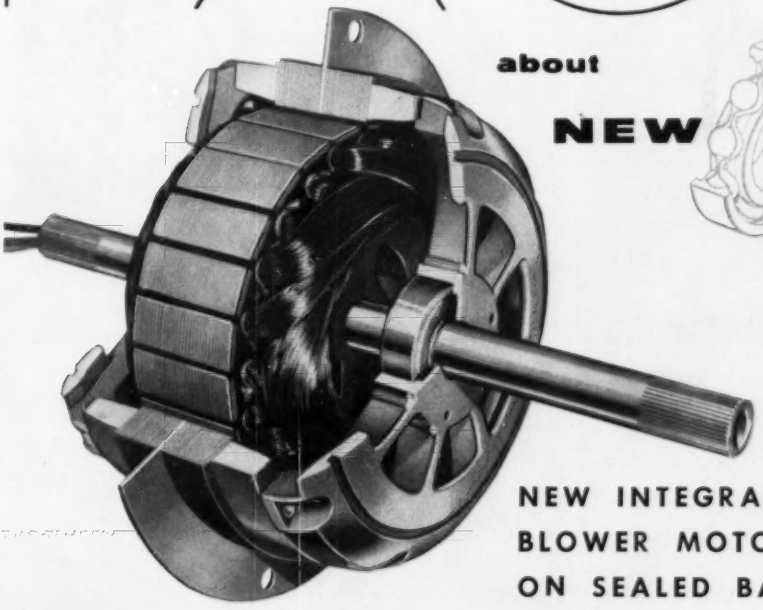
For more information, write direct or use Reader-Service post card.

FACTS

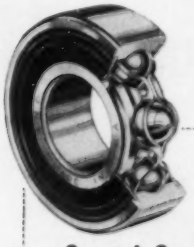
about

NEW DEPARTURE

BALL BEARINGS



NEW INTEGRAL-DRIVE BLOWER MOTOR DEPENDS ON SEALED BALL BEARINGS!



5 advantages of New Departure's Sentri-Seal ball bearings in electric motor applications

- **SEALED AND LUBRICATED FOR LIFE!** No need for relubrication; no danger of over- or under-lubrication.
- **SIMPLIFY DESIGN!** Eliminate need for separate seals and grease fittings.
- **CARRY LOADS IN ANY POSITION!** Moving parts are held in positive alignment, regardless of motor mounting position.
- **WEAR IS NEGLIGIBLE!** Require no attention for adjustment for wear. Have a reputation for outlasting the products they serve.
- **QUIET-RUNNING!** New Departure ball bearings are precision-made, run smoothly. Their uniformity is a guarantee of dependability.

Nowhere is the superiority of New Departure sealed ball bearings in electric motor applications better exemplified than in this new integral-drive blower motor.

Revolutionary "inside-out" design of this new motor imposed a lubrication problem solved by the permanent-lubrication characteristic of the finest sealed ball bearings. In this motor, the rotating element, to which the blower wheel is attached, is on the outside and revolves around a stationary shaft through which the lead wires pass. "Sealed and lubricated-for-life" New Departure ball bearings were selected because they assure permanent lubrication, regardless of centrifugal force. Also, because motor and blower wheel share the same permanently lubricated bearings, this integral unit is free of the need for periodic servicing.

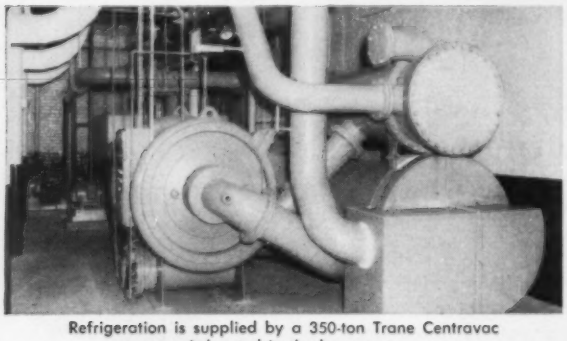
Equally important, New Departure sealed ball bearings handle combination loads in any position . . . assure positive alignment of rotor and stator. This means a versatility of application for this motor that offers new freedom to designers.

Sealed ball bearings also help increase motor efficiency and reduce electrical hum. Since in ball bearings wear is so slight as to be entirely negligible, designers were able to build in a smaller precision air gap, which is maintained throughout motor life.

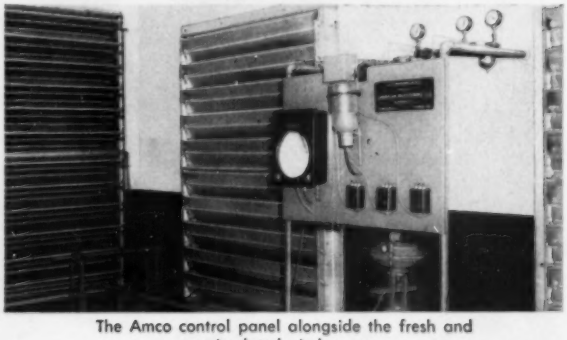
Let New Departure's unexcelled engineering service show you the many advantages of sealed ball bearings in electric motor and other applications.

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN.

Card room at Highland Park Mfg. Co., Mill No. 1, Charlotte, N. C. Ductwork and zone control atomizers are part of Amco's central station system, designed by J. E. Sirrine Company for the entire mill.



Refrigeration is supplied by a 350-ton Trane Centravac unit located in the basement.



The Amco control panel alongside the fresh and recirculated air louvers.

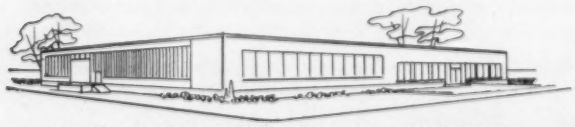
This ECONOMICAL split-system by Amco

provides thoroughly conditioned air, with maximum operating efficiency

Whether your need is for one room, or an entire mill, Amco offers air conditioning to meet your requirements. Amco designs and installs all types of systems — humidification alone; or in combination with cooling, such as in the ductless evaporating cooling system; unit dry-duct systems; or central station systems.

The central station system Amco recently completed at Highland Park Mill is a good case in point. In order to effect savings, it was felt advisable not to install the excess air capacity found in conventional design. Instead, Amco installed a "hand tailored" split system using a smaller central station unit augmented by room atomizers, thus reducing both initial cost and operating cost. This system provides complete control with even greater flexibility of operation. Savings have been substantial.

Amco engineers will be glad to work out a solution to any problem you may have. Next time call on Amco for reliable advice. There is absolutely no obligation.



New Cleveland-Rowan Plant of the American Moistening Company. This modern plant is located at Cleveland, N. C., for the fabrication of duct work and sheet metal products.

AMCO

AIR CONDITIONING SYSTEMS since 1888

AMERICAN MOISTENING COMPANY, PROVIDENCE, R. I. • ATLANTA, GA. • BOSTON, MASS. • CAMDEN, N. J. • CLEVELAND, N. C.

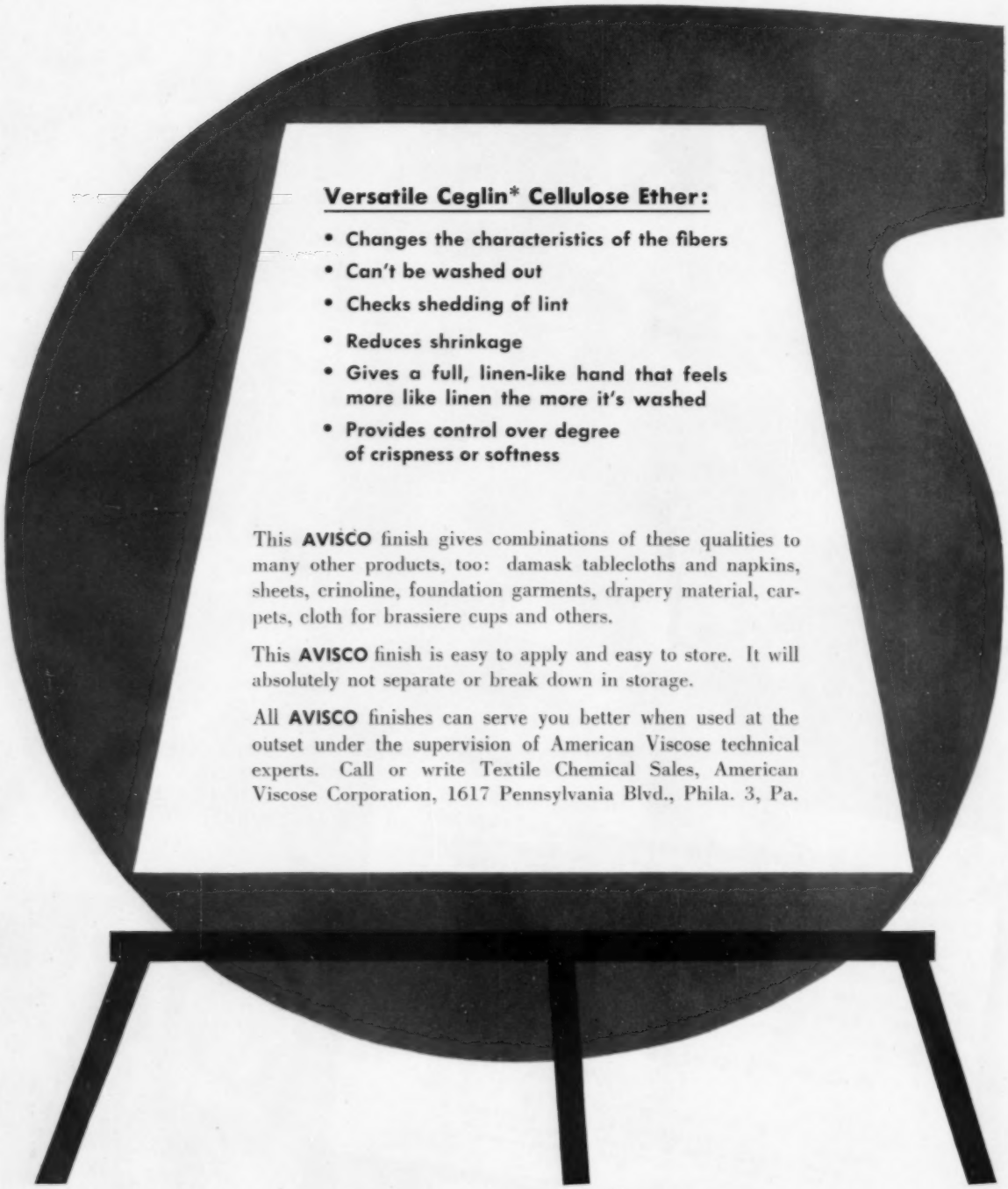
Sharpest Question in the woolen and worsted field right now is this: "*How to be competitive in pick-and-pick fabrics?*" And the answer is this: C&K's W-3 and W-3A SELECT-A-PIC LOOMS . . . which permit automatic bobbin-changing operation with automatic work-assignments on many fabrics which would otherwise be woven non-automatically. Several hundred SELECT-A-PIC LOOMS, in highly profitable operation today, have woven performance records which should be keenly interesting to you. We'll tell you about these records any time you like. Just write:

CROMPTON & KNOWLES *Corporation*

WORCESTER 1, MASSACHUSETTS, U. S. A.

CHARLOTTE, N. C. • PHILADELPHIA, PA. • ALLENTOWN, PA.
Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.
Crompton & Knowles of Canada Ltd., Montreal, Quebec

AVISCO* finishes add



Versatile Ceglin* Cellulose Ether:

- **Changes the characteristics of the fibers**
- **Can't be washed out**
- **Checks shedding of lint**
- **Reduces shrinkage**
- **Gives a full, linen-like hand that feels more like linen the more it's washed**
- **Provides control over degree of crispness or softness**

This **AVISCO** finish gives combinations of these qualities to many other products, too: damask tablecloths and napkins, sheets, crinoline, foundation garments, drapery material, carpets, cloth for brassiere cups and others.

This **AVISCO** finish is easy to apply and easy to store. It will absolutely not separate or break down in storage.

All **AVISCO** finishes can serve you better when used at the outset under the supervision of American Viscose technical experts. Call or write Textile Chemical Sales, American Viscose Corporation, 1617 Pennsylvania Blvd., Phila. 3, Pa.

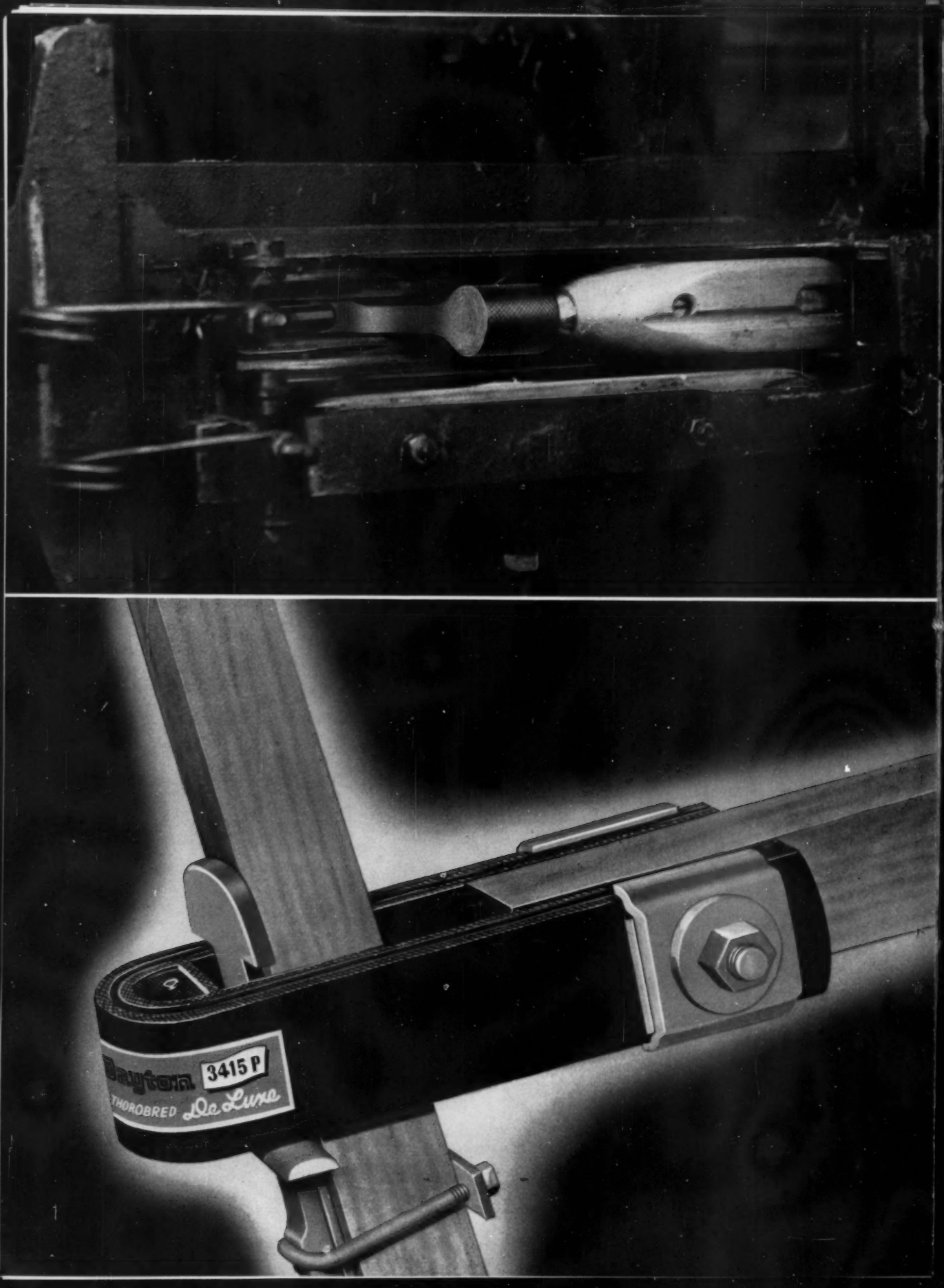
GROW WITH AVISCO*

For more information, write direct or use Reader-Service post card.

sales appeal to cotton textiles

*Avisco and Ceglin are trademarks of the American Viscose Corporation

TEXTILE CHEMICALS


Dayton
3415 P
THOROBRED
DeLuxe

3 point density control . . .

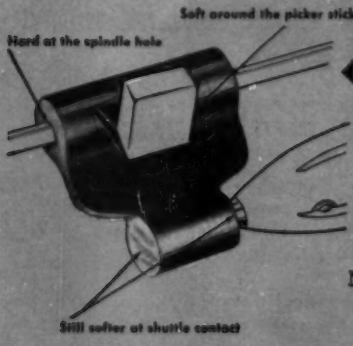
Protect vital loom parts
Reduce maintenance costs

with Dayton Thorobred | Drop Box Pickers Lug Straps

You're insuring the life of vital, expensive loom parts when you equip your looms with Dayton Drop Box Pickers. Cushioning action of shuttle-contact area protects shuttle points for millions of picker throws. Extra-resilient compound around picker hole absorbs tremendous shock of repeated shuttle contact, safeguards picker and connecting loom parts. Tough, durable composition in the spindle hole lasts longer, requires no lubrication.

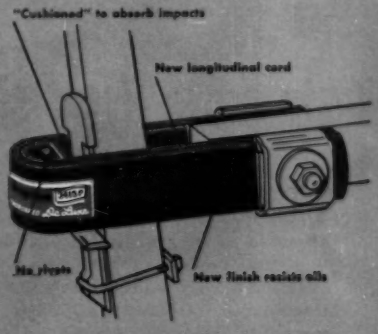
Key to protection of costly picker mechanism is the Dayton Thorobred Deluxe Lug Strap. Controlled elasticity in the molded-in plug cushions picker thrusts, safeguards loom parts. Newly designed, one piece construction assures longer service life, and special longitudinal cords guard against fatigue and permanent elongation. In actual tests against other types of lug straps Daytons gave 2 to 3 times the service life, better protection to looms.

For full information on how you can safeguard costly loom parts and reduce replacement costs with Dayton Thorobred Drop Box Pickers and Deluxe Lug Straps, contact your Dayton Representative or write Dayton Rubber Co., Textile Division, 401 S. Carolina National Bank Bldg., Greenville, S. C.



Thorobred Drop Box Picker
Absorbs loom shock,
protects loom parts!

Thorobred Deluxe Lug Strap
One piece construction!
No rivets or other parts to work loose!



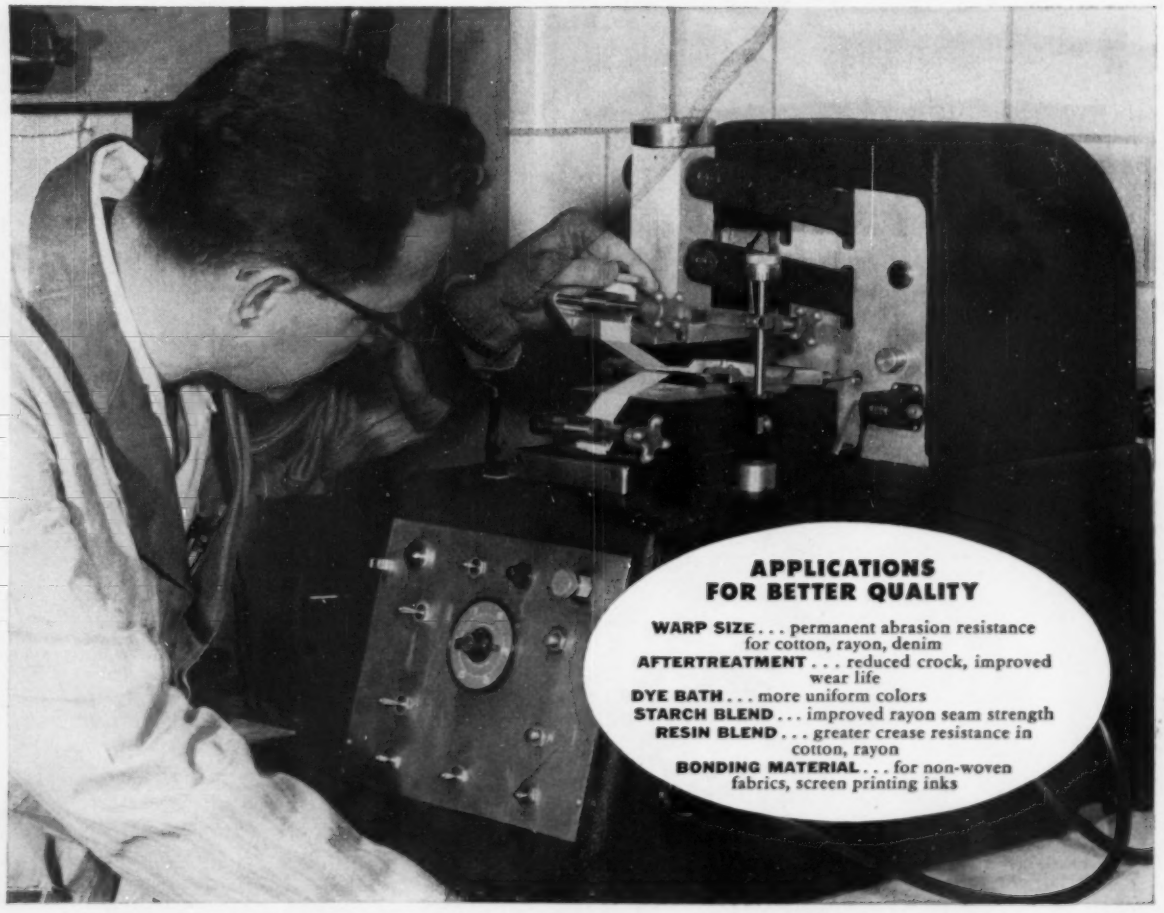
© D.R. 1956

Dayton Rubber 51 YEARS OF PROGRESS

Dayco and Dayton Thorobred Products for Better Spinning and Weaving.

News about

B.F.Goodrich Chemical *raw materials*


APPLICATIONS
FOR BETTER QUALITY
WARP SIZE . . . permanent abrasion resistance for cotton, rayon, denim
AFTERTREATMENT . . . reduced crock, improved wear life
DYE BATH . . . more uniform colors
STARCH BLEND . . . improved rayon seam strength
RESIN BLEND . . . greater crease resistance in cotton, rayon
BONDING MATERIAL . . . for non-woven fabrics, screen printing inks

Tests prove Hycar-sized fabrics 3½ times more durable

HYCAR Latex is a dispersion designed to improve textile quality in many ways. Take abrasion resistance. In a typical test comparing flex abrasion of untreated cotton sheeting with sheeting treated with Hycar 1562 Latex, the untreated material failed at 4000 cycles. The Hycar-treated material lasted to 14,000 cycles.

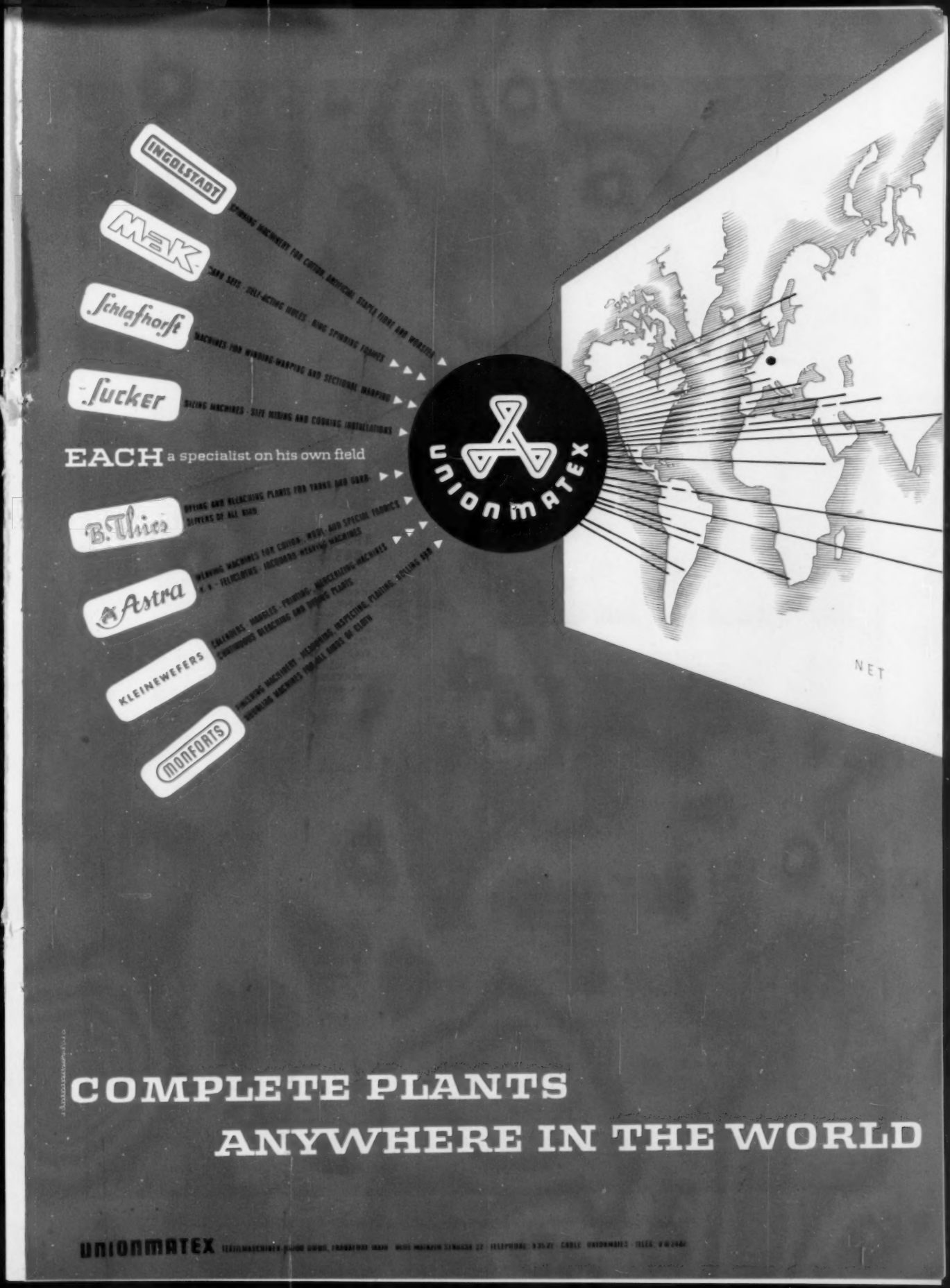
The use of Hycar latices offers many advantages: permanent wear resistance, soft hand and drape, high strength and excellent bonding qualities.

Hycar latex can help you improve quality in many processes, with many fabrics. For new booklet listing applications and benefits write Dept. EV-3, B. F. Goodrich Chemical Company, Rose Bldg., Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

B. F. Goodrich Chemical Company
A Division of The B. F. Goodrich Company

Hycar
Reg. U.S. Pat. Off.
American Latex

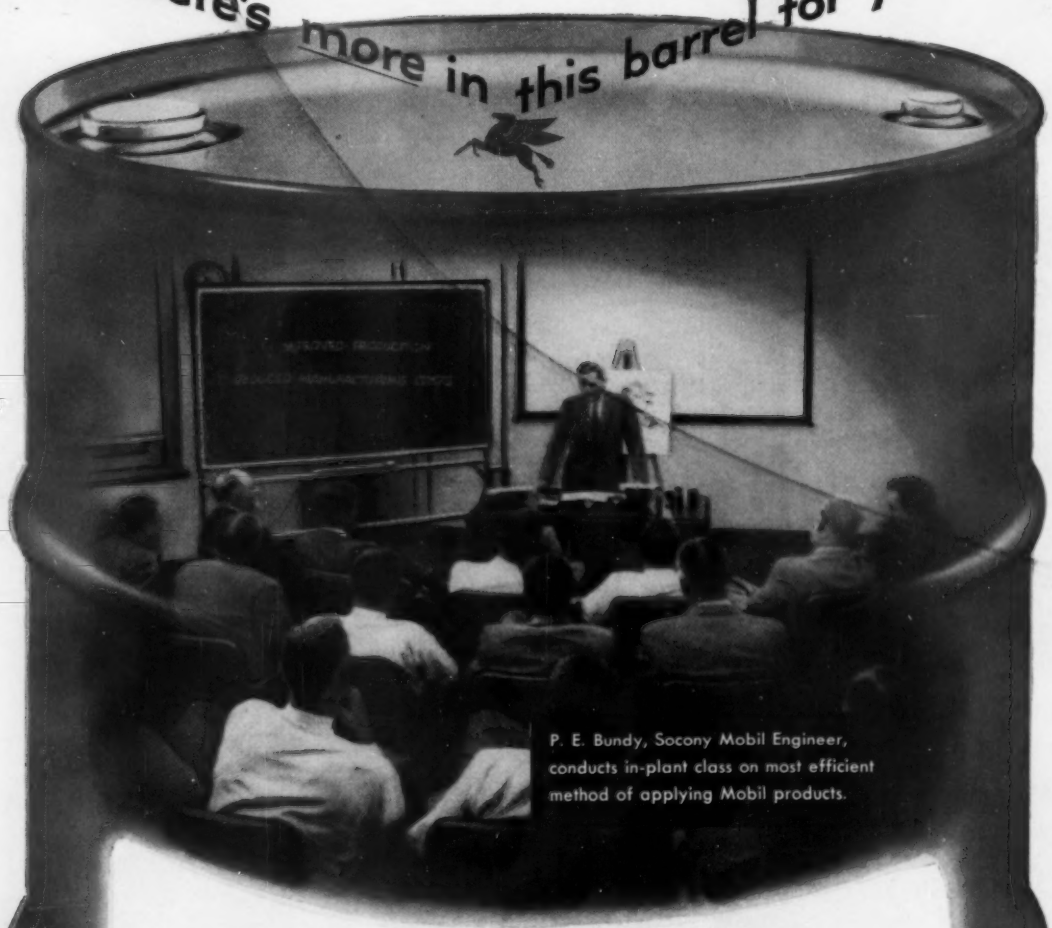
B.F.Goodrich GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors



COMPLETE PLANTS ANYWHERE IN THE WORLD

UNIONMATEX

There's more in this barrel for you...



P. E. Bundy, Socony Mobil Engineer, conducts in-plant class on most efficient method of applying Mobil products.

MORE IN-PLANT TRAINING

to help you improve production and cut costs!

With Socony Mobil petroleum products we offer you more in-plant training courses and seminars than any other oil company. Lubrication experts instruct your personnel in the most efficient, most economical methods of applying and using our products. This thorough training eliminates over-use and waste—helps improve your production and lower your unit costs.

Socony Mobil products are also backed by *more* field engineers serving industry . . . *more* continuous research to assure continually improved products . . . *more* services for analyzing petroleum products in use . . . *more* approvals from machine builders . . . *more* practical experience—90 years!

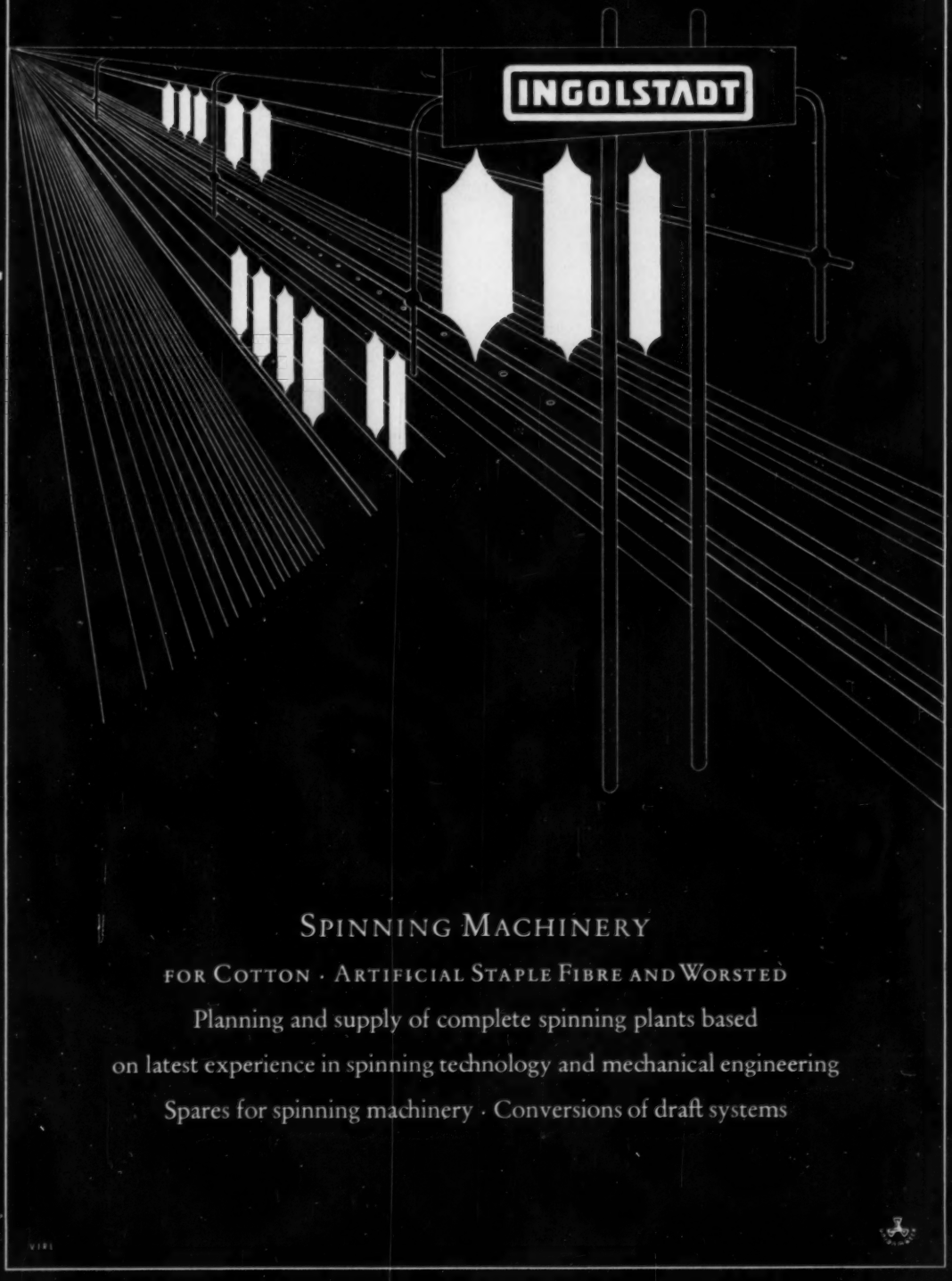
Always specify Socony Mobil. There's *more* in every barrel for you!

SPECIFY **SOCONY MOBIL** FIRST STEP IN CUTTING COSTS

SOCONY MOBIL OIL CO., INC., and Affiliates: MAGNOLIA PETROLEUM COMPANY
GENERAL PETROLEUM CORPORATION

LUBRICANTS • FUELS • CUTTING FLUIDS • WAXES • SOLVENTS • PLASTICIZERS • PETROCHEMICALS

DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT *Ingolstadt/Donau* GERMANY



SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

SPINNING MACHINERY

FOR COTTON · ARTIFICIAL STAPLE FIBRE AND WORSTED

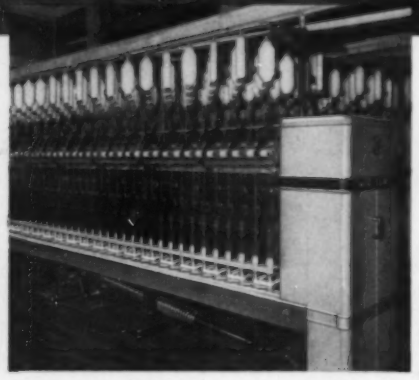
Planning and supply of complete spinning plants based
on latest experience in spinning technology and mechanical engineering

Spares for spinning machinery · Conversions of draft systems

VIRL

DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT *Ingolstadt/Donau* GERMANY

Spinning Room Efficiency INCREASED 22%
Winding Costs CUT OVER 2¢ per LB.
Coefficient of Variation DROPPED 2 POINTS



THIS GWALTNEY INSTALLATION of 7200 spindles produced these profit-making results in a knitting mill renowned for super quality.*

HERE ARE THE FACTS:

- Size of yarn — 28's super quality knitting.
- Size of rings — 3".
- Twist multiple — 3.00.
- Spindle speed — 8200 R.P.M.
- Front roll speed — 147 R.P.M.
- Traveler speed — 6440 ft. per min.
- Spinners assignment — 30 sides, 3600 spindles.
- Ends down per 1000 spindle hours — 13.2.
- Increase in breaking strength per skein — 16.89%.
- Weight of yarn on package — 12 oz.

The **only way** to achieve this type of performance consistently is with a Saco-Lowell Gwaltney Spinning Frame installation. Since 1953, over 450,000 spindles of Gwaltney, in 70 mills, have been installed and are setting new standards of production efficiency, quality, and profits in these mills.

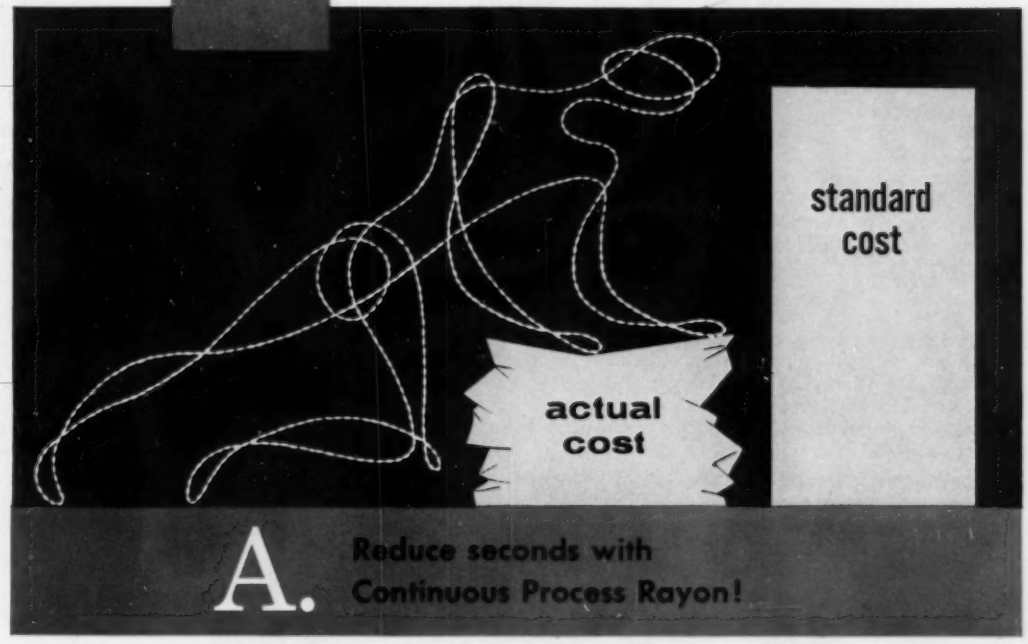
Have a Saco-Lowell Sales Engineer study your operations and prepare a "Forecast of Savings" that will tell you what to expect from a Gwaltney Installation in your mill.

*Name on request.

SACO-LOWELL
60 BATTERYMARCH STREET, BOSTON 10, MASS.
Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.
SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

cost accounting for mills

Q. How do you make your actual cost lower than your standard cost?



A. Reduce seconds with Continuous Process Rayon!

Your weaving room is less likely to get tied up in knots when you use the rayon yarn that comes to you perfect, inch after inch, mile after mile.

IRC Continuous Process Rayon is so free of knots and breaks that it's specified—*insisted upon*—by weavers of critical fabrics like satin and twills. They find it uniform end to end, and that it dyes streak-free!

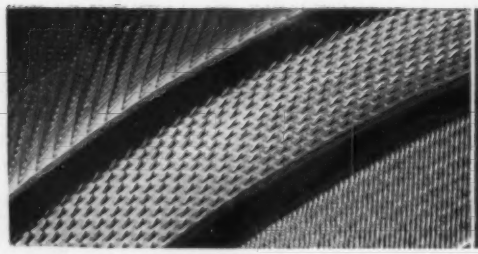
Another important factor: IRC Continuous Process Rayon costs no more than ordinary rayons. Need we say more?

I·R·C

INDUSTRIAL RAYON CORPORATION
CLEVELAND, OHIO

Producers of Continuous Process Rayon Yarns, Tyron® Cord for Tires and The New Nylon Staple Fiber.
Sales Offices: 500 Fifth Avenue, New York 36, N. Y.
437 Guilford Bldg., Greensboro, N. C.

 For more information, write direct or use Reader-Service post card.



Ashworth Tips ON CARDING

No. 30 in a Series

TRENDS IN WOOL CARD CLOTHING

In today's rapidly changing situation we, as a manufacturer of card clothing, have been continually working on new ideas regarding wire foundation and settings, to meet the ever changing conditions with which the woolen mill is confronted. This is particularly true of clothing for the breaker section, since it receives the most abuse and replacements are more frequent. Following are the results of some of our research:—

1. Wire for use in card clothing must be uniform in temper, accurate in gauge, with a combination of hardness, ductility and toughness to resist fatigue. The following types, although not new to the wire industry are now being used in wool card clothing:
   (a) Music Wire—Although higher in price than conventional card wire, this wire is most satisfactory when conditions in the mill call for extra wire strength.
   (b) "AB Wire"—A new product recently developed by our company to stand up under difficult carding operations.
   (c) Stainless Steel—Although this type of wire is not ordinarily associated with wool carding, it has proven far superior to regular or cadmium plated wire, when napping goods that are wet or slightly acid. Its cost is greater than the plated type, but this fact is more than offset by longer life under difficult conditions.
2. Foundations—These must be pliable with a high tensile strength, flexibility and a minimum of stretch.
   (a) With the use of coarser wire on the breaker section of the wool card, additional plies (i.e. 6 ply flexifort) in the foundation have been necessary. They give greater support to the teeth and prevent setting back, or loss of pitch.
   (b) The trend is away from the use of leather foundations for lickerin and fancy clothing. This is because tooth movement has a tendency to elongate the holes in the leather; also because leather varies considerably in firmness and susceptibility to stretch. A fabricated foundation (i.e. Dresco, Balata, etc.) is frequently being used for lickerin clothing. For fancies more resilient types are being used, plied with rubber cement and having a felt or synthetic rubber face.
   (c) Felt face foundations, such as 6 ply regular felt with rubber insert, and 6 ply (2 PW) impregnated felt, are being used to a greater extent. When set with special types of wire and with the correct distribution of points, they give added support to the staples and run for a longer period without stripping.
3. Settings—"Settings", as applied to card clothing, means the number of points per square foot set in the foundation, in accordance with a predetermined pattern. Many years of experimental work by textile mills and the card clothing manufacturer have established standard wool card clothing settings.
   (a) Because of the many types of synthetic fibres, and blends of these with wool, variations from the standard settings are sometimes necessary. For instance, a #28 wire is on occasion used in a #30 wire setting.
   (b) Deviation from the generally accepted combination of wire size and settings, however, should be attempted only when the characteristics of the stock demand it.

ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

Fall River*†‡ Worcester‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)
E. G. Paules, Representative — Los Angeles, Calif.
*Factory †Repair Shop ‡Distributing Point
3 Factories • 6 Repair Shops • 7 Distributing Points

PRODUCTS AND SERVICES

Clothing for Cotton, Wool, Worsted, Silk, Synthetic Fibre and Asbestos cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Topflats Reclothed.

NOTE: All rights reserved. Reprints, free of charge, on request to Ashworth Bros., Inc., Fall River, Mass.

Ashworth PIONEERS IN CARD CLOTHING

3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 DISTRIBUTING POINTS

BOOM LOADING "GENTLES" THE COAL INTO WAITING CARS . . .
MAINTAINS INITIAL SIZING AND BANS DEGRADATION

BEACON COAL

EASTERN GAS AND FUEL ASSOCIATES

PITTSBURGH • BOSTON • CLEVELAND • DETROIT • NEW YORK
NORFOLK • PHILADELPHIA • SYRACUSE

For New England: New England Coal & Coke Co., For Export: Castner, Curran & Bullitt, Inc.

On-The-Job Proof!

LQ600 VALVES

STAND UP WHERE OTHERS FAIL!

In four years of actual field tests, conducted by nearly 100 cooperating companies, NOT ONE LQ600 VALVE HAS EVER LEAKED OR FAILED.

LQ600
150 lb. S.P.
300 lb. W.O.G.

CHEMICAL PLANT

"LQ600 is still tight after three years on a very tough 150 lb. steam service installation where competitive valves used to leak in 2 weeks to 2 months."

MEAT PACKER

"We are writing to let you know how pleased we have been with the LQ600 Valves we put on our toughest lines. We installed these valves in three of the most difficult locations in our plant and have had trouble-free operation ever since they were installed."

HOSPITAL

"LQ600 is still tight and functions perfectly after 31 months of service on a water column blowdown installation where competitive valves failed by wire drawing in two months."

DISTILLERY

"An LQ600 Valve was installed for throttling service on a syrup line at 140°F. After 9 months the valve was removed for inspection. It was tight and in perfect condition. This valve was put into another test installation and is still tight."

DAIRY PLANT

"The LQ600 Valve was installed more than three and a half years ago on a steam line with rust and scale present at all times. This valve has withstood service conditions where others were replaced on an average of once a year due to seat and disc erosion."

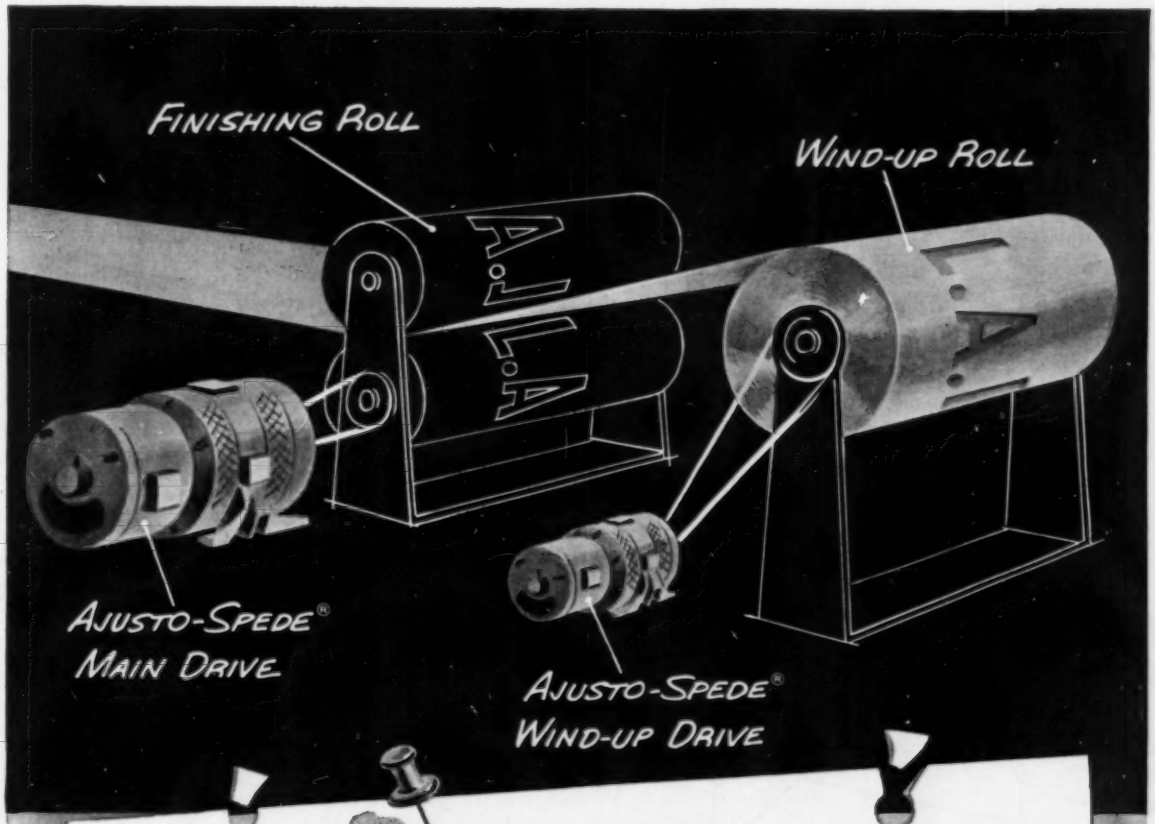
* Patented Alloy

WRITE FOR Circular 602, a new four-page bulletin on the LQ600 Valve. Request it from your Lunkenheimer Distributor, or write The Lunkenheimer Company, Box 360, Cincinnati 14, Ohio.

LUNKENHEIMER®

THE ONE *Great* NAME IN VALVES

L-855-15



Do you have a Wind-up Problem?

The Louis Allis Ajusto-Spede® Drive gives you the best answer

The Ajusto-Spede® drive has solved many difficult wind-up problems--has successfully handled a wide range of materials from cigarette paper to steel. Just look at the versatility of this drive--what it can do for you:

- Linear speed range from 100 to 2000 fpm.
- Roll build-up ratios up to 15:1.
- Tensions from 1/2 lb to 10 lbs per inch of width.

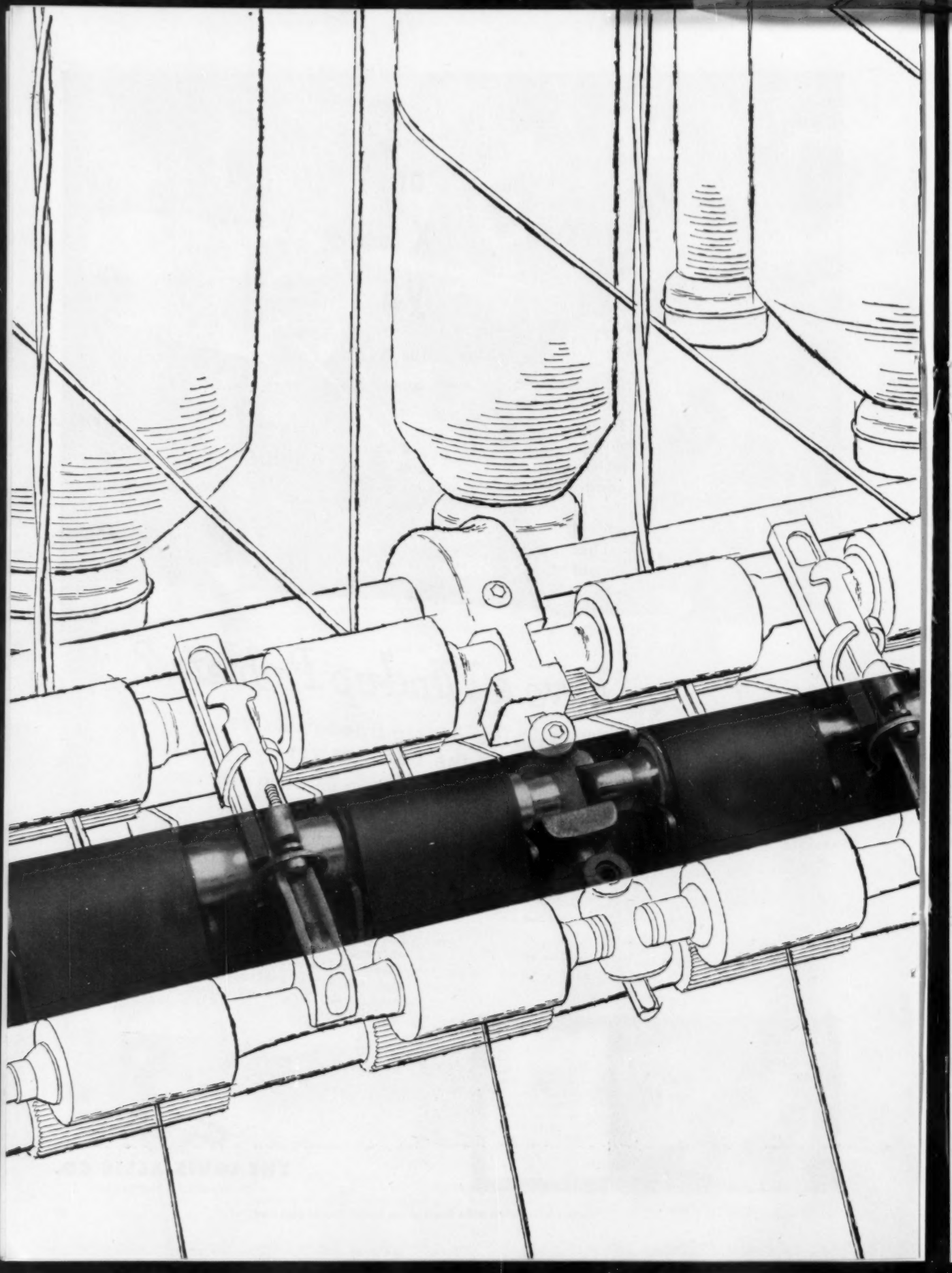
But that's not all. No dancer roll is required. An AC signal generator, mounted on the main drive, corrects for changes in linear speed. A special circuit provides inertia compensation during periods of acceleration or deceleration. Adjustable stalled tension is also provided.

Don't let your wind-up problems throw you. Consult your Louis Allis field engineer--he has the drive and he also has engineering experience in applying these drives that can help you.

Write for latest information describing the Ajusto-Spede® and other adjustable speed drives manufactured by Louis Allis Co.

AS-102

THE LOUIS ALLIS CO.
MILWAUKEE 7, WISCONSIN



Here's one reason why

Accotex Aprons give good yarn control

Unique test helps Armstrong develop rubber compounds with proper surface friction

To make sure Accotex® Aprons have just the right surface friction to maintain good yarn control, Armstrong research engineers use the specially designed friction tester shown below.

This device determines the amount of surface friction of rubber compounds. Weighted test samples are pushed across a polished steel bar, and the amount of force necessary to move the sample is measured and recorded automatically on a separate test unit.

Tests like these help Armstrong chemists develop Accotex Aprons which have the exact frictional characteristics required by modern, high-draft spinning frames.

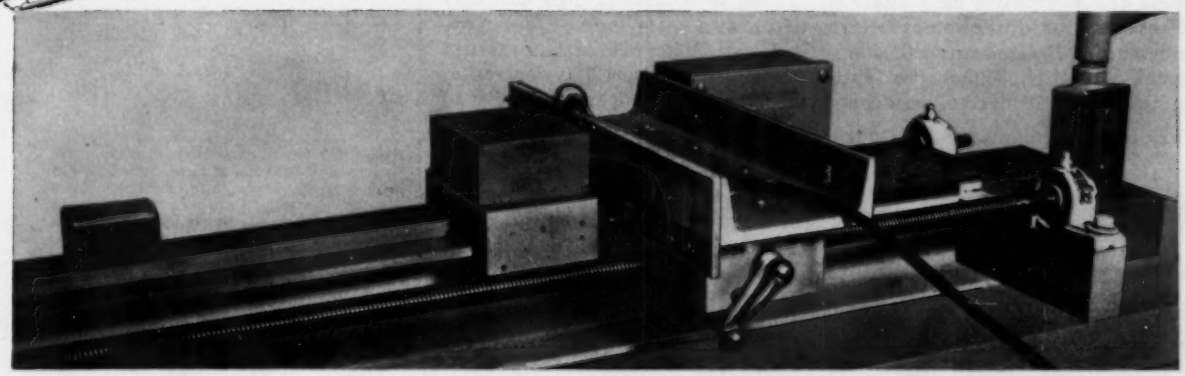
Other advanced research and development methods—plus the very latest production techniques—also assure you that Accotex Aprons will consistently deliver top-quality yarn.

If you're not already using Accotex Aprons, arrange for a test frame next time your Armstrong representative calls. No matter what type of equipment you're using . . . no matter what you're spinning, there's an Accotex Apron specially engineered for your needs.

For the booklet, "Armstrong Textile Roll Coverings and Mill Supplies," write Armstrong Cork Company, Industrial Division, 6406 Dauphin Street, Lancaster, Penna.

Armstrong ACCOTEX APRONS

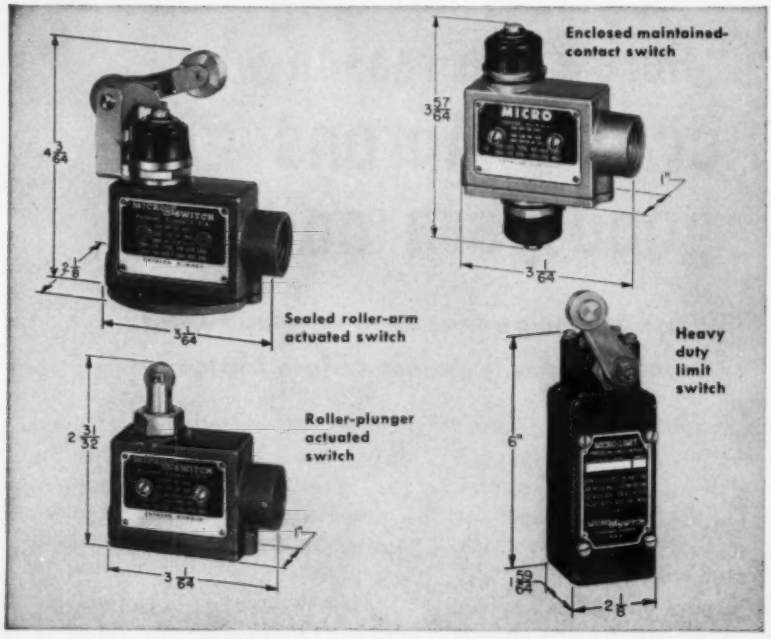
. . . used wherever performance counts



"FRICTION TESTER." Here's the Armstrong Horizontal Friction Tester. The amount of force needed to push a weighted sample of synthetic rubber across a given length of polished steel is measured on this device and automatically recorded on a separate test unit.

MICRO *precision switches*

...THEIR USE IS A PRINCIPLE OF GOOD DESIGN



These MICRO precision switches make textile operations safer—more productive

Whether you are a manufacturer of textile equipment or a plant operating man it will pay you to know ALL about MICRO precision switches.

The switches shown here were selected by plant engineers to make the operations shown at the right safer, more automatic and more productive. They are but a few of the many MICRO precision switch types now in use in hundreds of textile plants.

Sealed Roller-Arm Actuated Switch: For use with mechanically operated cams or slides. Elastomer boot protects the switching unit against effect of liquids, dust or other foreign substances. Roller arm is field adjustable through 360 degrees horizontally and 225 degrees vertically.

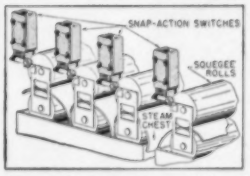
Enclosed Maintained-Contact Switch: For applications which require sustained contact after the actuating force has been released. A reset plunger enables the switch to be reset for succeeding operations. Elastomer boot prevents entrance of dust or moisture through the actuating mechanisms.

Roller-Plunger Actuated Switch: Designed for operation by cams or slides whose approach is in the same direction as the longitudinal axis of the switch. Rugged overtravel mechanism insures accurate repeat ability of the enclosed switching unit even when subjected to continual impact.

Heavy Duty Limit Switch: Ruggedly housed to withstand high humidity and linty atmospheres of textile operations. Roller arm actuator is field adjustable through 360 degrees at intervals of 0.4 degrees to any of 870 positive lock positions.

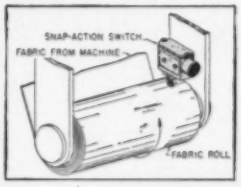
For complete information on switches for textile equipment write for the name of the distributor nearest you. MICRO SWITCH field engineering is available at your nearest branch office.

Saves Fabric and Production Loss on Bleach Range



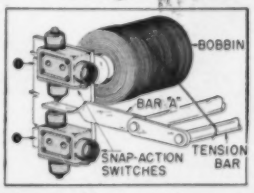
MICRO heavy duty limit switches are installed on bearing which raises—with roll. As cloth raises the switch stops the range, preventing fabric and production losses.

Controls Roll Size on Circular Knitting Machine



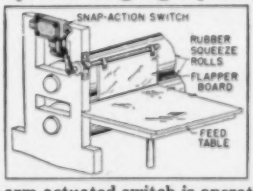
Roller-plunger actuated switch is operated by the roll when the fabric being made or processed reaches the desired roll size. Switch then stops the machine automatically.

Keeps Proper Yarn Tension for Knitting Operation



Two enclosed maintained-contact switches are used to prevent breakage of yarn due to either too high or too low tension. In either case Bar A contacts one switch or the other and shuts off the machine.

Protects Operator's Hand in Carpet Wringing Operation



Roller-arm actuated switch is operated by cam to shut off rolls in case baffleboard is pushed forward enough to catch operator's hand in the rolls. Carpet is positioned in the nip of the rolls by hand but machine will not operate until hands are withdrawn.

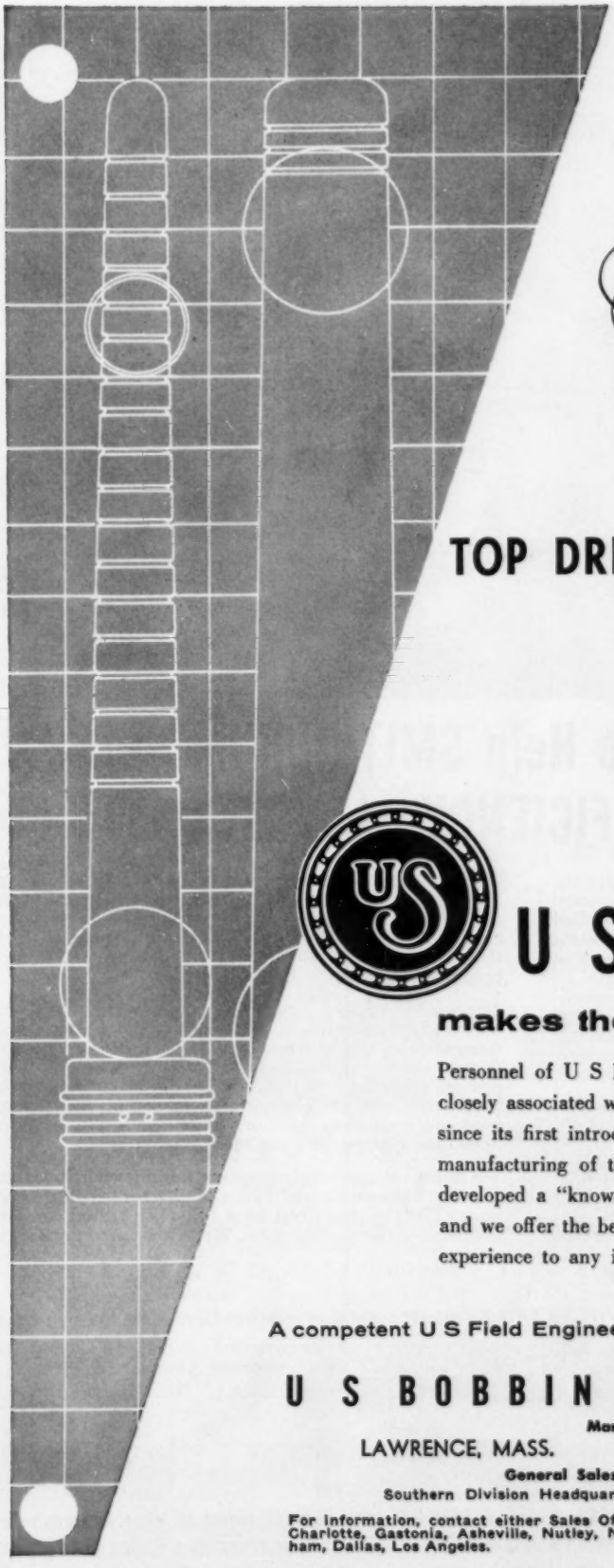
SEND FOR CATALOG 83
For information on a wide variety of enclosed switches.

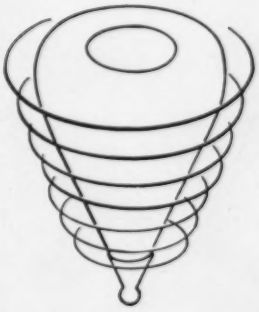
MICRO SWITCH

A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

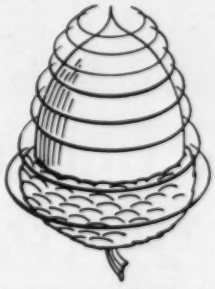
In Canada, Leaside, Toronto 17, Ontario • FREEPORT, ILLINOIS

For more information, write direct or use Reader-Service post card.





TOP DRIVE or ACORN DRIVE?



U S BOBBIN

makes the BEST of both!

Personnel of U S Bobbin & Shuttle Co. have been very closely associated with the Top Drive principle in the bobbin art since its first introduction to American mills. In the manufacturing of these quills and warp bobbins we have developed a "know how" of which we are justly proud . . . and we offer the benefits of this valuable accumulated experience to any interested mill.

A competent U S Field Engineer will contact you promptly, on request.

U S BOBBIN & SHUTTLE CO.

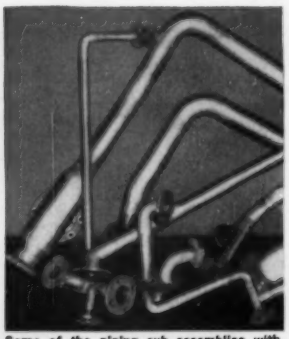
Manufacturing Plants

LAWRENCE, MASS. • GREENVILLE, S. C.

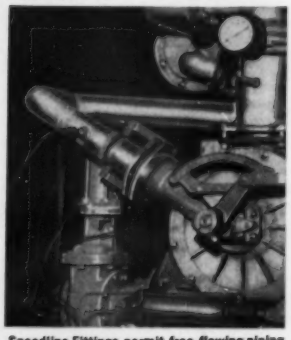
General Sales Office LAWRENCE, MASS.

Southern Division Headquarters: 428 Birnie St., GREENVILLE, S. C.

For information, contact either Sales Office; or our Technical Field Representatives located in Charlotte, Gastonia, Asheville, Nutley, N. J., North Attleboro, Mass. Supply Houses: Birmingham, Dallas, Los Angeles.



Some of the piping sub-assemblies with Speedline Fittings used on package dyeing machines.



Speedline Fittings permit free-flowing piping assembly in factory testing installation.

Speedline Fittings Help SMITH-DRUM Get... ...HIGH FLOW EFFICIENCY—LOWER COSTS

Factory testing of Smith-Drum package dyeing machines requires the high standards of piping efficiency and economy demanded in actual textile plant installations. Fabricated fittings for Schedule 10 stainless steel pipelines at Smith-Drum had proved costly as well as ineffective for maintaining high flow conditions vital to machine performance and efficient batch dyeing operations. Both problems were solved simultaneously—with bonus advantages to spare—when company officials replaced fabricated fittings and castings with Speedline Stainless Steel Fittings, especially designed for low cost Schedules 5 and 10 stainless pipe.

Savings in installation time and costs? Speedline fittings eliminated the making of sheet metal templets, figuring contours, cutting, rolling—even welding of the pipeline assembly! Speedline Fittings permit speed and flexibility of installation not possible with conventional fittings. Speedline's exclusive "tangential feature" adds an extra straight section to *every* end of *every* formed fitting. Flange where you want to . . . butt weld where you want to . . . even flange without welding—there's plenty of clearance to use any type of joint with Speedline Fittings. And the choice can be made on the job—design hours can be kept to a minimum.

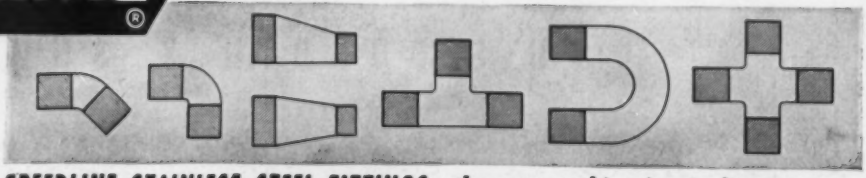
Improved flow conditions? There's no turbulence at threaded joints with Speedline Fittings! Flow is uniform at every phase of the piping installation . . . *quality is more readily controlled for dyeing operations* or other process operations. Contamination and corrosion problems are solved too, because there are no crevices to hold contaminating solutions where corrosion resistant Speedline Fittings join stainless steel pipe!

There are other advantages possible only with Speedline Fittings and economical light wall pipe for textile process lines. They're described in a fully illustrated booklet available without obligation. Write for your copy today.

Speedline®

SPEEDLINE DISTRIBUTORS ARE LOCATED IN PRINCIPAL CITIES FROM COAST TO COAST

Write for a copy of "Speedline Fittings"... without obligation.



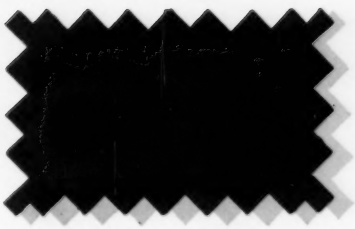
®REG. TM **SPEEDLINE STAINLESS STEEL FITTINGS—the newest thing in pipeline economy**

Manufactured by **HORACE T. POTTS COMPANY** • 520 E. Erie Avenue • Phila. 34, Penna.

Now from National three widely useful stabilized diazonium salts

NATIONAL® BLUE 3BVS SALT

Produces reddish-blue shades when coupled with National Naphthols AS-OL, AS-BG, AS-RO, AS-BO and AS-BR; greenish-blue with other naphthols except AS-G which yields a dull orange shade. Full properties and application data are given in our Bulletin 431, available from our nearest office.



NATIONAL BLACK K SALT

Couples with National Naphthols AS-BG, AS-BS and AS-SW to produce a jet black. Yields reddish-black when coupled with other naphthols. Ask our nearest branch office for our shade card (Bulletin #430) giving complete data on properties and procedures for package dyeing, naphtholating and printing.

NATIONAL BLUE 2BS SALT

This salt produces greenish-blue shades when coupled with National Naphthols AS-D, AS-TR Disp. and AS-E; reddish-blue shades with other naphthols except AS-G Disp. which yields a bright yellow. For properties, naphtholating and developing procedures, get our shade card (Bulletin #440) from our branch office nearest you.

Coupled with various National Naphthols these National stabilized diazonium salts all possess very good-to-excellent fastness to light, washing, soda boil and other wet processing. They are applicable by all the dyeing and printing processes generally employed for dyes of this type. Many combinations can be discharged to excellent whites with hydrosulfite discharge pastes.

NATIONAL ANILINE DIVISION ALLIED CHEMICAL & DYE CORPORATION
40 Rector St. New York 6, N. Y. • Boston Providence Richmond Atlanta Chicago Portland, Ore. Cleveland
Greensboro Charlotte Los Angeles Philadelphia Columbus, Ga. New Orleans San Francisco Chattanooga Toronto

Allied Chemical

For rug dyeing headaches - the proved cure is

The Fleet Line

RUG DYE KETTLE

This cost-cutting equipment has been thoroughly proved in several years of service. It enables you to do even, level, quick dyeing — side-to-side and end-to-end — of heavy materials in open width . . . cotton or any synthetics, whatever the demand may be . . . richer, thicker goods as required . . . eliminating the high cost of seconds due to uneven dyeing. You can —

Dye many varieties of weaves, keep up with the constantly changing demand for dyeing various synthetics and blends.

Double or triple the speed of your operation on many rug types by *simultaneous multiple dyeing* of different widths — with special guiders enabling you to run through various widths of rug fabric at the same time.

Write for bulletin giving all features of R & L Stainless Steel Rug Dye Kettle. We advise on all dyeing equipment problems.

R & L Rug Dye Kettle proved in service in many plants

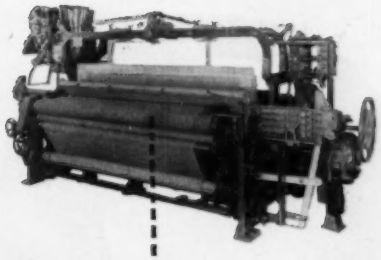
ADVANTAGES

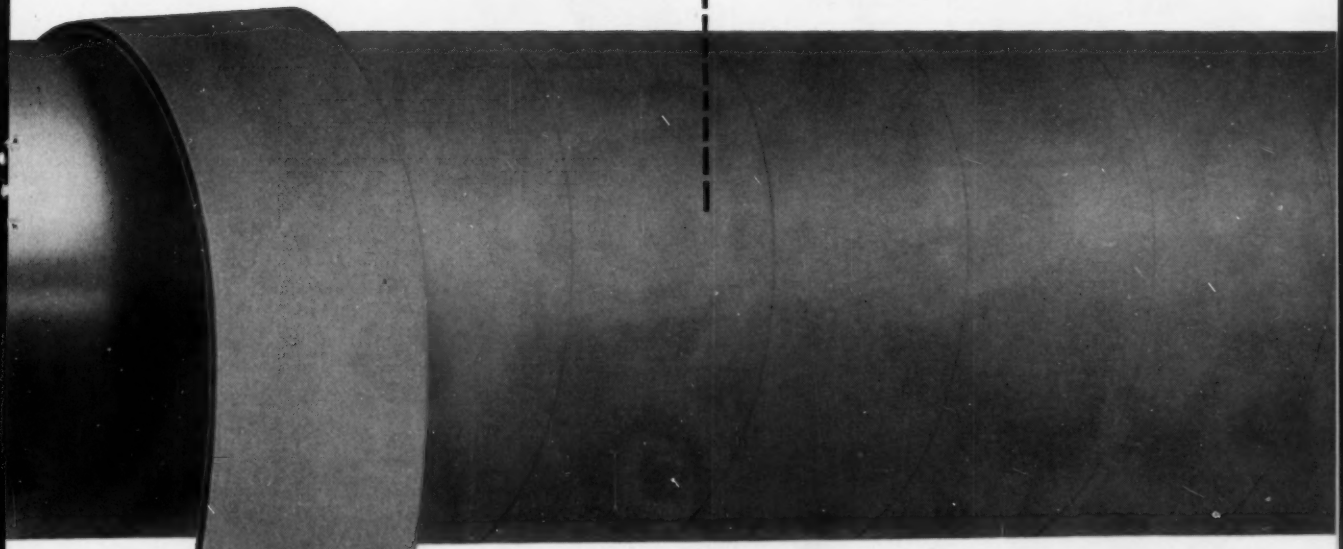
Dyes open widths or rope
Multiple width dyeing
More level dyeing
Faster dyeing cycle
Lower dyeing costs
Lower labor costs
Proved, assured results
Easier maintenance

RIGGS AND LOMBARD INC.

FOOT OF SUFFOLK ST., LOWELL, MASS.

Agents: Paul A. Merriam Company, P.O. Box 86, Providence, R. I., Albert R. Breen, 80 E. Jackson Blvd., Chicago 4, Ill., Larry T. Nelson, 2824 S. W. Montgomery Drive, Portland, Ore., F. W. Warrington Co., 611 Johnston Bldg., Charlotte, N. C., A. Harold Zayotti, Jr., P.O. Box 125, Riverton, N. J., H. E. Mott Co., Limited, Brantford, Ontario, Canada.





REDUCE FABRIC MARKING

. . . with this extra-smooth take-up roll covering

You can weave even the most delicate loom-finished fabrics without the risk of take-up roll marks—when you use Armstrong NO-732 Take-Up Roll Covering. This covering, made from a special synthetic rubber compound, has a smooth, finely textured surface that handles all kinds of cloth safely.

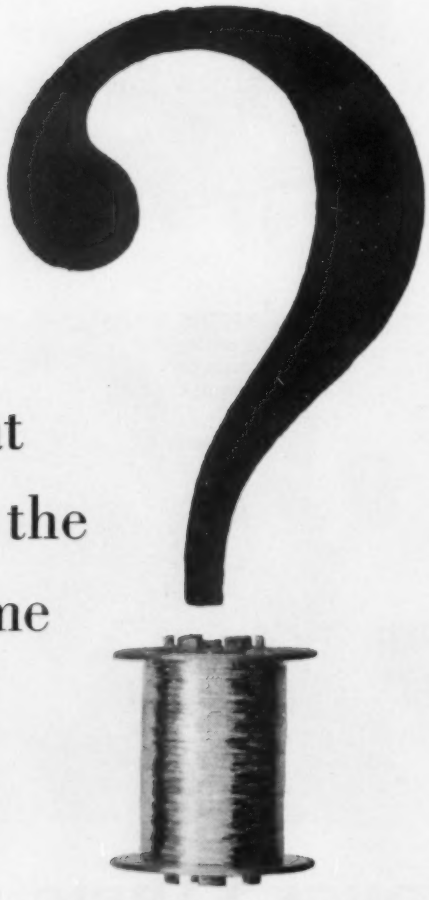
For all this smoothness, NO-732 has exceptionally high surface friction—up to *twice* the holding power you'd normally expect from synthetic rubber. As a result, this covering always gives firm, uniform take-up tension from selvage to selvage. Like all Armstrong Loom Supplies, NO-732 Covering gives long, dependable service, too. It's backed with sturdy fabric for extra strength and good adhesion to the roll. Your Armstrong man will be glad to help arrange a test.

For more information on NO-732 and other Armstrong weave room items, send for our new folder, "Armstrong Loom Supplies." Address Armstrong Cork Company, Industrial Division, 6906 Dauphin Street, Lancaster, Pennsylvania.

Armstrong LOOM SUPPLIES

. . . used wherever performance counts

LOOM CLUTCH DISCS AND INSERTS . TAKE-UP ROLL COVERINGS . LOOM BRAKE AND LET-OFF STRIPS . TEMPLE ROLL COVERINGS



What is the name

that's known in metallic yarns?

Why do consumers recognize Lurex® instantly?
Because Lurex has been nationally advertised in leading publications for more than a decade.

What makes retailers eager to promote Lurex?
The very name of Lurex makes news. Lurex attracts store traffic. Lurex sells merchandise.

Why are leading designers associated with Lurex?
Lurex is the *creative* metallic yarn, a vital source for important new ideas and new color effects.

What stimulates mills to develop new fabrics with Lurex?
Lurex has established itself as the smooth-running metallic yarn that produces more profitable fabrics.

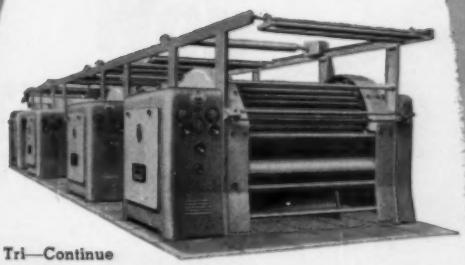
Why does industrial management keep an eye on Lurex?
Lurex is known as an outstanding stimulant for new end-uses . . . enlarging the potential area of profit.

LUREX®
the metallic yarn that never tarnishes

This tag tells you it's LUREX
the leader . . . the non-tarnishing metallic yarn made only by

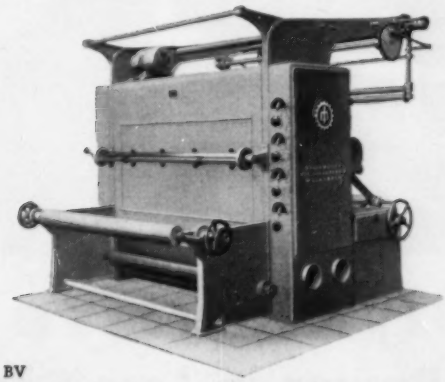
The Dobeckmun Company,
Cleveland 1, Ohio · New York: 350 Fifth Avenue · London · Amsterdam

Boston: 43 Leon St. • Philadelphia: 1801 W. Cheltenham Ave. • Charlotte, N. C.: 221 S. Church St. • Chicago: 330 Wells St. • Detroit: 2970 W. Grand Boulevard



Tri—Continue

TRI-NAPPING MACHINES for top quality and performance in napping fabrics of all sorts (also available for continuous systems)



BV

BRUSHING MACHINE (Model BV) with 2, 4, or 6 rolls for brushing, cleaning, napping or smoothing fabrics on both sides.

Especially suitable for preparing print material and for cleaning and softening hard fabric.

100 YEARS

PRODUCTION PROGRAM

Dept. 1

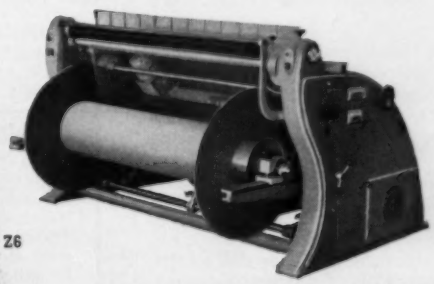
Finishing Machines for woolens, cotton, cellular wool, etc.

Dept. 2

Cutting & Finishing Machines for Corduroy, Velveteen, Suedes.

Dept. 3

Weaving, Preparatory Machines, High Speed Cone Winder, Yarn Singeing Machines, High-Speed Warping Machines



Z6

WARPING MACHINE (Model Z 6) New Construction for Beams up to 800 mm dia. and suitable for a warping speed of up to 600 m/min.

FRANZ MÜLLER MASCHINENFABRIK M. GLADBACH (Rheinland) GERMANY

NORTHERN U. S. AND CANADA:
TEXTILE MACHINERY IMPORT CO., 277 NORTH AVENUE, NEW ROCHELLE, N. Y.

SOUTHERN U. S.:
PARROTT & BALLENTINE, 510 S. CAROLINA NATIONAL BANK BUILDING, GREENVILLE, S. C.

 For more information, write direct or use Reader-Service post card.

R/M *Poly-V® Drive*

Delivers More Power in Less Space!

No other belt drive can deliver as much power in the same space. It's R/M's patented Poly-V Drive developed by R/M engineers after years of research. This totally new concept in power transmission delivers up to 50% more power than a conventional V-belt drive of equal width.

Unique design accounts for the unusual power capacity of R/M Poly-V Drive. A *single, endless* belt with parallel V-ribs runs on sheaves specially designed to mate precisely with the belt ribs. The uniform pull of this single unit belt distributes drive load evenly over the full width of the sheave . . . gives higher horsepower capacity per inch of drive width than ever before possible.

There are many advantages in this space-saving drive wherever heavy duty power transmission is required . . . in the equipment you manufacture—or the equipment you use in your plant. Poly-V Drive has eliminated the matching problems of multiple V-belt drives, greatly increased the life expectancy of belts and sheaves and maintains more constant speed ratios under all loads. Just *two* cross sections of Poly-V meet every heavy duty power requirement—R/M Poly-V Drive cuts costly belt and sheave inventories to a new low!

Let the R/M engineers who developed Poly-V Drive work with your engineers to improve your power transmission applications. Contact R/M . . . or write for a copy of Poly-V* Drive Bulletin #6638.

CONDOR V-BELTS • R/M SUPER-POWER V-BELTS

Write for Bulletin #6868 on the complete line of Condor V-Belts for regular service on conventional V-belt drives. Also write for Bulletin #6628 on R/M Super-Power V-Belts with 40% more Horsepower capacity where needed.

*Poly-V is a registered Raybestos-Manhattan trademark

RM 848

MANHATTAN RUBBER DIVISION—PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.

Other R/M products include: Industrial Rubber • Fan Belts • Radiator Hose • Brake Linings • Brake Blocks • Clutch Facings • Asbestos Textiles • Packings • Engineered Plastic, and Sintered Metal Products • Laundry Pads and Covers • Bowling Balls

For more information, write direct or use Reader-Service post card.

Know more about motors...

USE THIS HANDY APPLICATION GUIDE TO SELECT

Century

Performance-Rated® MOTORS

Putting Performance-Rating to work...

...is an important step in improving the performance of driven equipment. Only if the motor fits the speed, power and operating requirements of your equipment, can you be sure of top performance and trouble-free service.

Century's unusually wide range of size, speed, frame and torque characteristics makes possible countless combinations ...one of which will be precisely right for your particular application.

Choosing a Century motor, Performance-Rated to fit your job, is a matter of minutes when you use this handy Application Guide...

ELECTRICAL FORMS

- TYPE
- HORSEPOWER RANGE
- RPM RANGE
- SPEEDS — CONSTANT / MULTI-SPEED / ADJUSTABLE
- STARTING CURRENT
- STARTING TORQUE

CHARACTER OF LOAD

TYPICAL EQUIPM
BEST SUITED

MECHANICA

METHOD OF M
Sleeve
Ball Bea

GET YOUR FREE COPY of this useful Century Performance-Rated Application Guide ... simply mail this coupon:

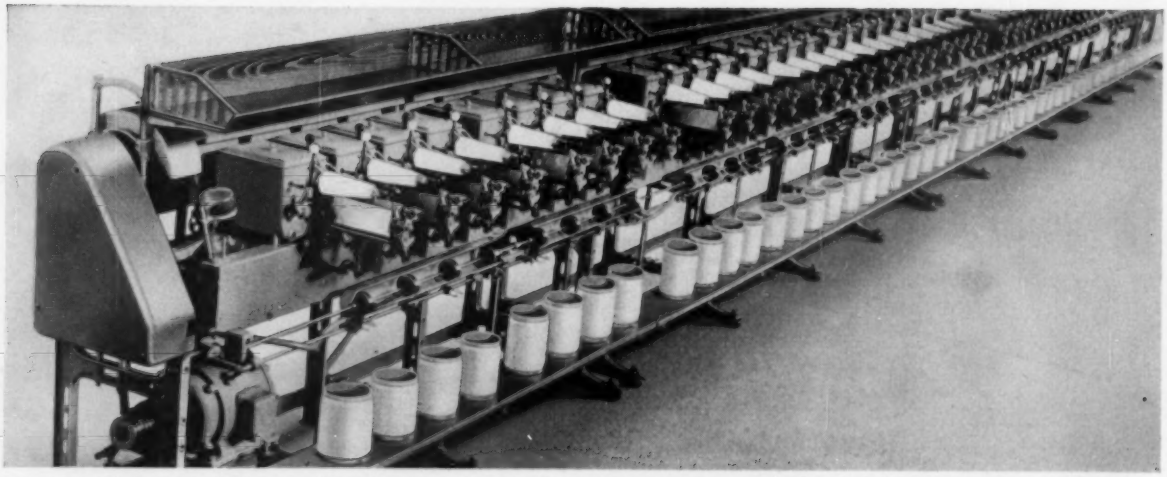
CENTURY ELECTRIC COMPANY
1806 Pine Street, St. Louis 3, Missouri

Please send Application Guide, Form 1700, to:

Name .....
Company .....
Address .....
City ..... State .....

Performance-Rated®
MOTORS
1/8 to 400 H. P.

CENTURY ELECTRIC COMPANY
1806 Pine Street, St. Louis 3, Missouri
Offices and Stock Points in Principal Cities



Precision Schweiter Monofil-Coner for the production of "Pineapple" bobbins. Equipped with conditioning device comprising trough and roller.

SCHWEITER MONOFIL-CONER TYPE KEK-PN SOLVES WINDING PROBLEMS FOR PLANTS WITH TEXTURED YARNS

Amazingly versatile machine winds delicate yarns as fine as 11 denier — Nylons, Orlons other man-made fibres — at constant yarn speed and tension into uniform and soft cones and cheeses.

ANY CLAIM that a machine is without competition is generally taken with a grain of salt. But in the field of winding delicate man-made fibres, the Schweiter Monofil-Coner Type KEK-PN actually *is* in a class by itself. We know of no other machine made today that can wind the finest yarns into such perfect packages of uniform density, ideal for knitting or other processing.

The yarn runs in a straight line to the cone. For highest production winding, yarn speed can be increased in minutes by changing over to constant spindle speed.

For those yarns where it is desirable, Schweiter has designed a uniform and even compensating gate tension specifically for the Monofil-Coner. Also available is an accurate oiling or humidifying device, built of stainless steel, infinitely variable and quickly adjustable, used to apply the exact amount of oil or moisture to the yarn.

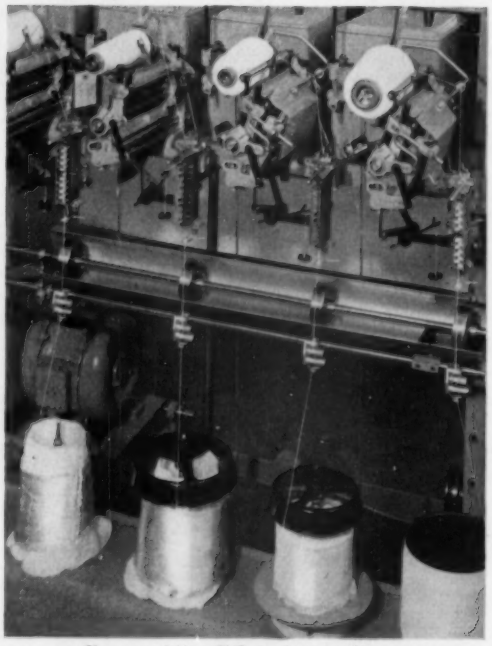
The exclusive "Penta Wind" holds even the most slippery yarn firmly on the wound cone or cheese so that it can be shipped safely, without collapsing.

Smooth and quiet in operation, all gears and revolving parts run in oil in an oil-tight gear and cam box.

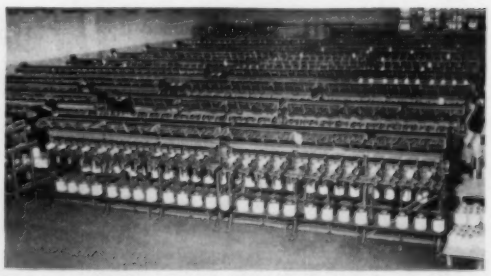
The Monofil-Coner has been proven to be the most perfect winder for rubber, elastic, textured and stretch yarns. It winds them onto the desired package in a completely relaxed state so that the yarns come off unstretched, with all their original quality and characteristics.

To prove that the Schweiter Monofil-Coner can put your plant on a higher level of operating efficiency, the Schweiter people will be glad to arrange for you to visit a Monofil-Coner equipped plant in your own area so that you can see this machine in operation and meet its users, men who will tell you sincerely and frankly what it can do.

For detailed information, write for descriptive brochure. Or, if you prefer, Schweiter will send you results of actual winding tests made with your own yarn . . . results that will open your eyes to what you've been missing.



Close-up of Monofil-Coner in operation, showing straight-line yarn feed.



A modern plant equipped with 850 Monofil-Coner units for the handling of fully synthetic yarns.

SCHWEITER LTD.
HORGEN (ZURICH) SWITZERLAND

Sales and Service in the United States and Canada

H. J. Theiler Corporation
Whitinsville, Massachusetts Spartanburg, South Carolina

Two important names in the Textile Industry . . .

BRANSON and LASSITER . . .

unite to bring you

NEW, GLITTERING

FAIRTEX® YARNS

Metallic Yarns
Supported Metallic Yarns
Mylar* Metallic Yarns

Whether you weave, knit or crochet . . . whether you work in cotton, wool, silk, linen or the synthetics . . . give your fabrics greater eye-appeal and buy-appeal with new, glittering FAIRTEX Yarns.

These new FAIRTEX Yarns are backed by many years of experience and fifteen months of research and development. To Branson Company's comprehensive knowledge of weaving and knitting has been added Lassiter Corporation's notable proficiency in the plastics field.

FAIRTEX Metallics are non-tarnishing, highly color-fast and heat-resistant . . . they may be fabricated with ease on practically any type of machine.

FAIRTEX Metallic, Supported Metallic and the new Mylar* Metallic Yarns are available now in a wide range of sparkling colors to meet the designers' every requirement.

**Registered Trademark for Dupont's Polyester Film.*

FAIRTEX® YARNS

Metallic • Supported Metallic • Mylar* Metallic

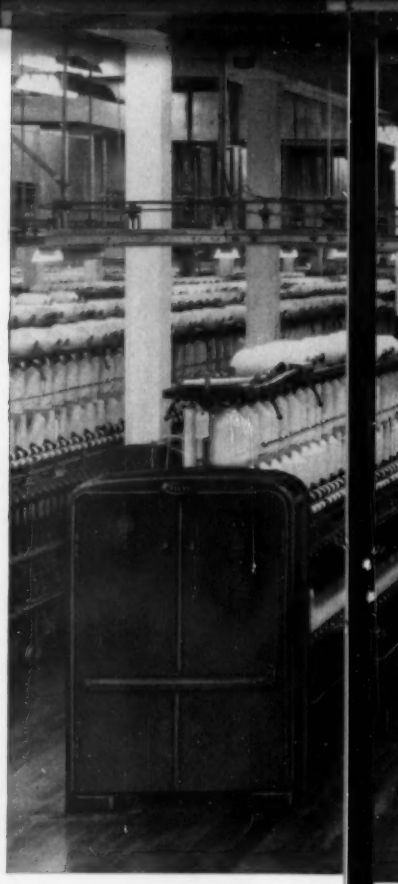
Fairtex Corporation
Charlotte, N. C.

CHARLOTTE
Lanier Branson, Jr. and J. E. MacDougall, Jr.
1808 Liberty Life Bldg.

CHICAGO Napier & Harshman
3555 Peterson Ave.

NEW YORK Robert Napier
51 E. 42nd St.

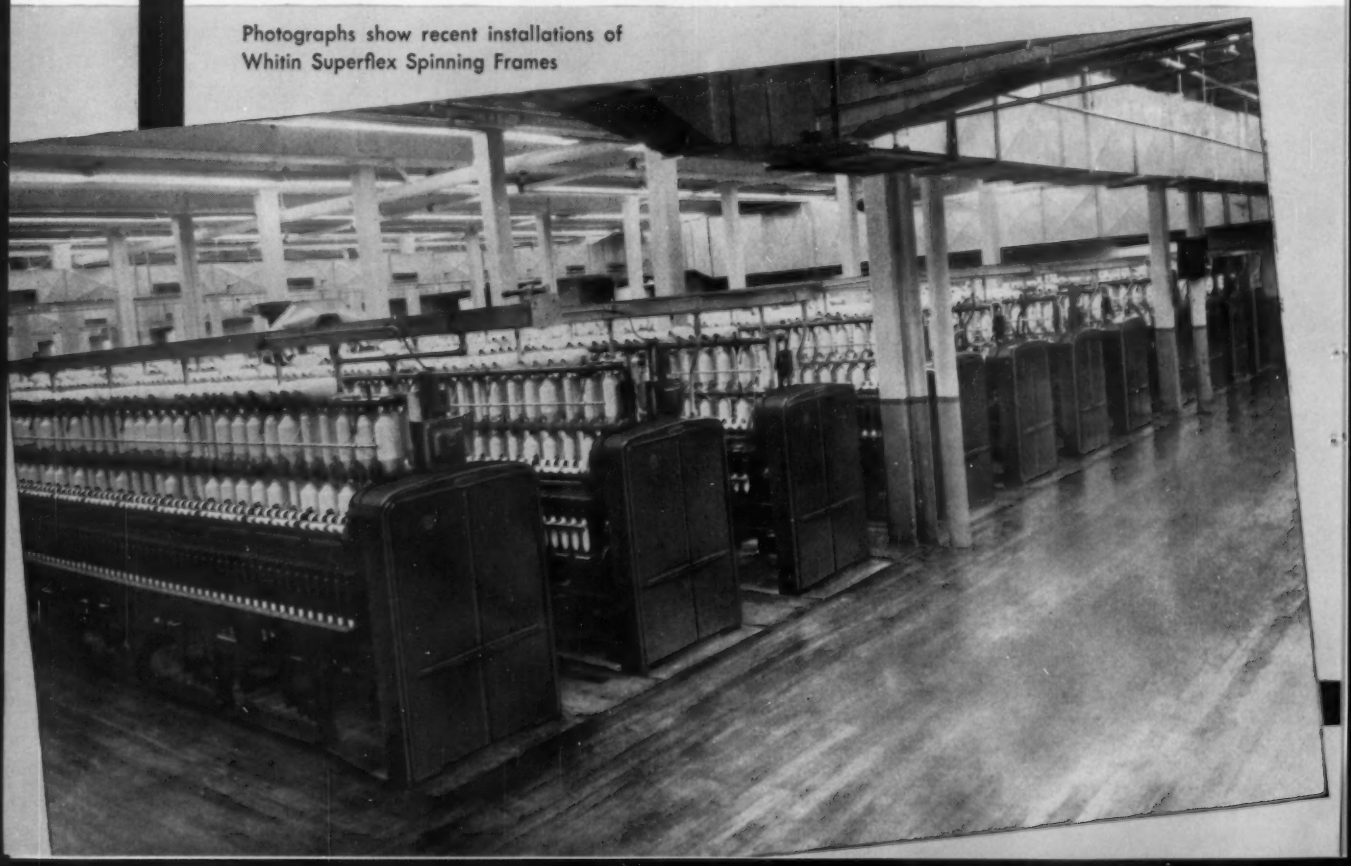
Statistics make headlines... *but* Performance makes Profits!



Statistics for machine production often make news, but actual machine performance plays the decisive part in creating mill profits. The performance of Whitin Superflex Spinning frames and the profits. they are producing now in many leading mills are the best test of their true worth. That's why Whitin Superflex Spinning frames are the continuing and growing choice of mills demanding maximum yarn quality and minimum spinning costs — the essential ingredients of profits.

..so look at the profit-producing performance

Photographs show recent installations of Whitin Superflex Spinning Frames



# of Whitin SUPERFLEX* SPINNING

As a specific example of the advanced economies and practical benefits that can be secured with Whitin Superflex Spinning frames, the following mill data is presented, based on actual operating conditions in the production of high quality print cloth, 80 x 80, 39", 4.00 yds./lb., 31's warp and 41's filling.

	Warp	Filling
Yarn No.	31's	41's
Gauge	3½"	3"
Ring	2"	1 7/16"
Traverse	11"	7"
Wt./Yn./Bobbin	.345 lbs.	.119 lbs.
Spindle R.P.M.	10,300	11,000
Traveler Speed, F.P.M.	5376	4140
Twist Multiplier	4.25	3.90
T.P.I.	23.7	25.0

	Warp	Filling
Front Roll Speed	138	140
% Efficiency	95	95
Lbs./Spdle./Hr.	.0265	.0203
Lbs./Spdle./120 Hrs.	3.180	2.436
Spdles./Operator	3900	3864

Labor cost per lb. including all direct and indirect help in Spinning Room . . . . . $.03322

For complete information ask your Whitin representative or write direct to us.

WHITIN MACHINE WORKS FOR 125 YEARS — ONE COMPANY WITH ONE PURPOSE — SERVICE TO THE TEXTILE INDUSTRY — 1831 - 1956

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

because Chemstrand has

ONE

integrated nylon plant

(the only one in the country)

ONE

source of raw materials

ONE

unified quality control system

YOU GET TOP QUALITY NYLON YARN

THE CHEMSTRAND CORPORATION • GENERAL SALES OFFICES: 350 FIFTH AVE., NEW YORK 1, N. Y. • DISTRICT SALES OFFICES: 9 Rittenhouse Place, Ardmore, Pa.; 4 Pearl Street, Dedham, Mass.; 222 South Church Street, Charlotte, N. C. • PLANTS: CHEMSTRAND® NYLON–Pensacola, Fla.; ACRILAN® ACRYLIC FIBER–Decatur, Ala.

a new **Dilts** product

TD-4 SLITTER-REWINDER...

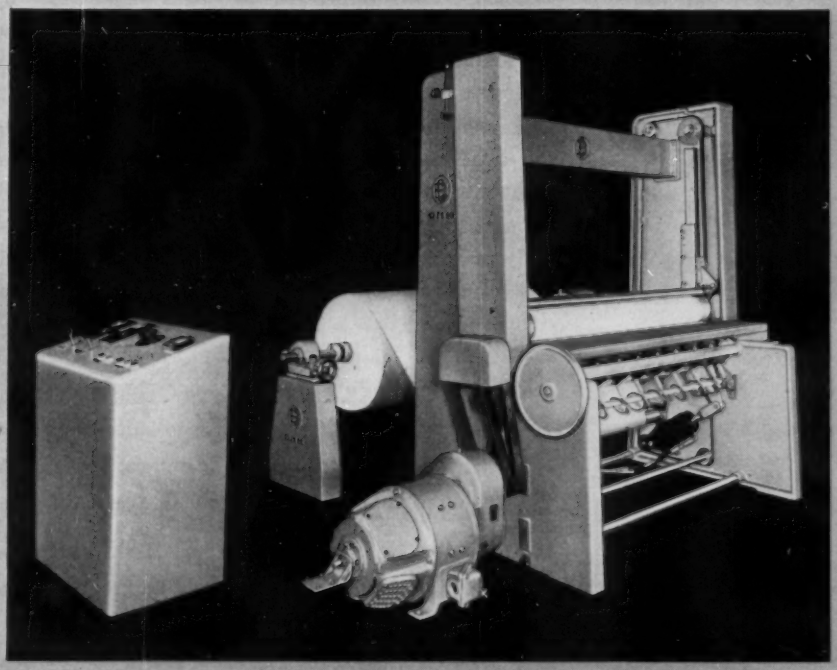
for converting operations on paper, film, foil, textiles and board.

This modern machine based on proved principles of slitting and rewinding incorporates major design improvements.

These improved designs feature a riding roll overdrive insuring tight starts, confrolled pneumatic engagement of slitters, ball bearing mounted and positive axial locking of core winding shaft and extensive use of standard and readily available commercial items.

The TD-4 has 4" diameter drums, 30" rewind capacity and can be furnished with shear or score type slitting. It is designed in standard widths of 42", 52" and 62" and operates at speeds to 1000 fpm. Other Dilts models are available for rolls up to 72" in diameter and widths to 130"

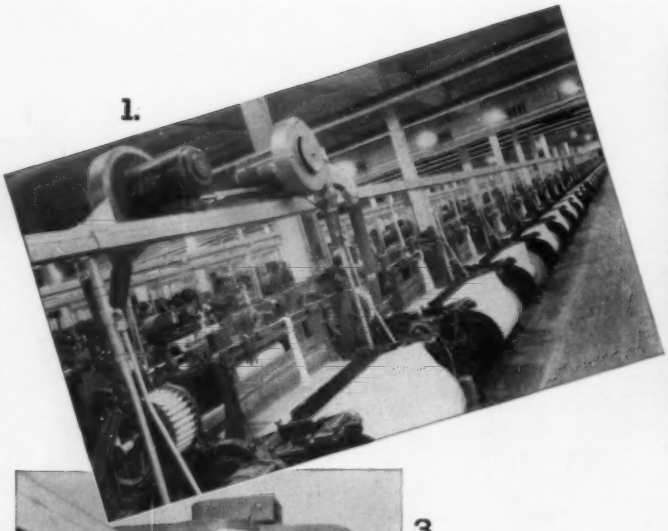
Write for Specification Sheet 105 on the TD-4.

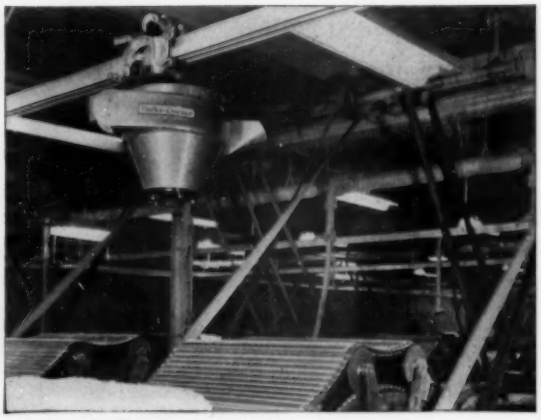


The **BLACK-CLAWSON** *Company*

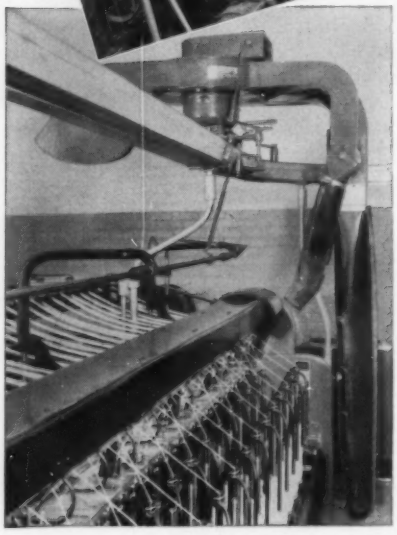
DILTS DIVISION • FULTON, N. Y.

1.





2.



3.

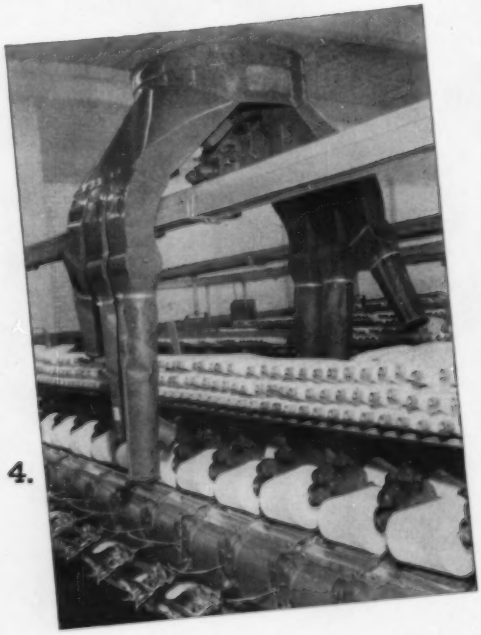
Parks-Cramer®

Since 1926 Parks-Cramer Traveling Cleaners have helped hundreds of textile mills make more and better yarns and fabrics at less expense. Early models were used mostly for cleaning creels of spinning frames.

Continuous development and improvement have extended cleaning ability to all areas of the spinning frame and to other machines throughout the yarn and fabric mill.

The idea of cleaning the ceiling, first originated in 1928, has similarly been extended. Now we clean all room surfaces from ceiling to floor—even collect and remove the sweepings automatically!

4.

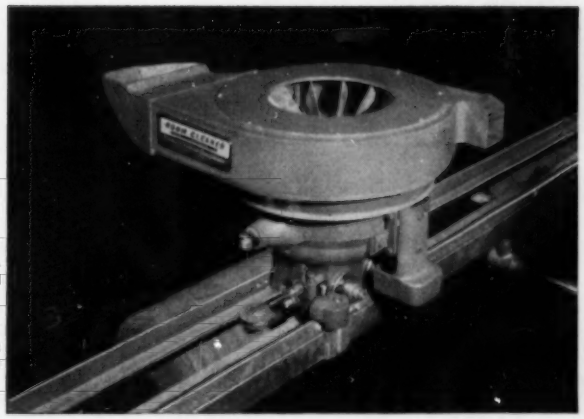


1. **LOOM CLEANER** (Type CTL). Air currents of ample velocity. Directed close to surfaces to be cleaned by fixed and oscillating air outlets. Means for automatic reduction of air over sensitive areas.

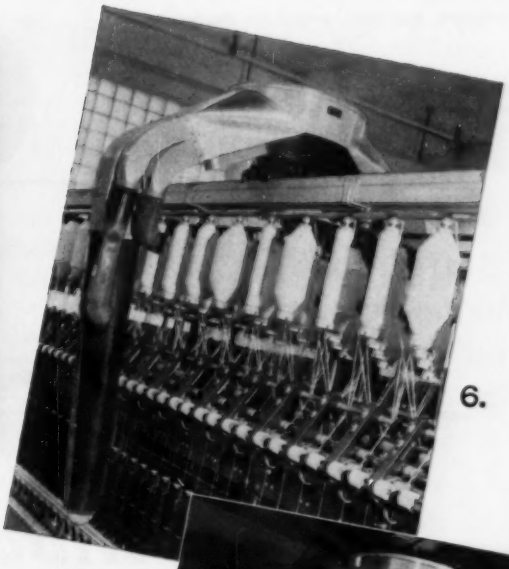
2. **ROOM CLEANER** (Type CBR). Hangs below single rail track. Air distributor revolves continuously. Directional control of air currents.

3. **ROVING FRAME CLEANER** (Type CTFV). Includes means for automatically reducing or deflecting air blasts while cleaner passes over a frame being doffed or creeled.

4. **CLEANERS FOR WINDERS, SPOOLERS, WARPERS, TWISTERS.** Similar to frame cleaners, with air distributors and outlets to suit the requirements.



5.



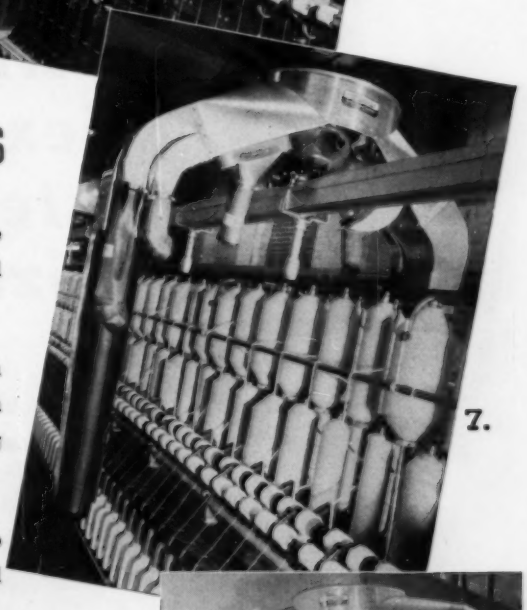
6.

Traveling Cleaners

5. ROOM CLEANER (Type CTR). Rides on and above its track. Air distributor revolves continuously. Used alone or coupled to frame cleaner.

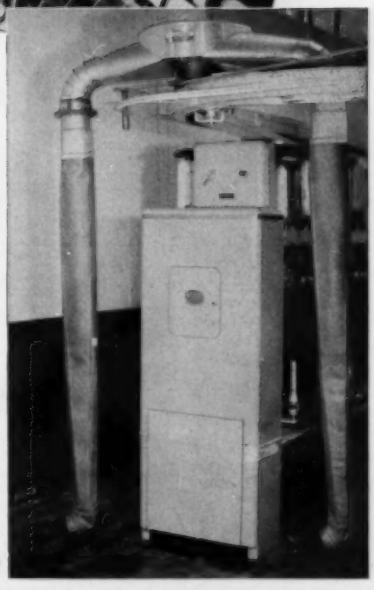
6. & 7. SPINNING FRAME CLEANER (Type CTF). Fifteen air outlets. Single unit delivers air where needed with proper velocity and volume for each area including underframe.

8. FLOOR SWEEPER (Type CTS). Usually coupled to frame cleaner. Sweeps lint along floor to a central location from which it is removed by vacuum.



7.

8.



All these Parks-Cramer cleaners are self-propelled. All air outlets below head height are flexible. Outlets are adjustable for air velocity and direction.

Rugged track construction. Shielded electrical conductor rails.

Parks-Cramer traveling cleaners save labor, increase production, improve product and working conditions.

For details and recommendations, consult:

Parks-Cramer Company

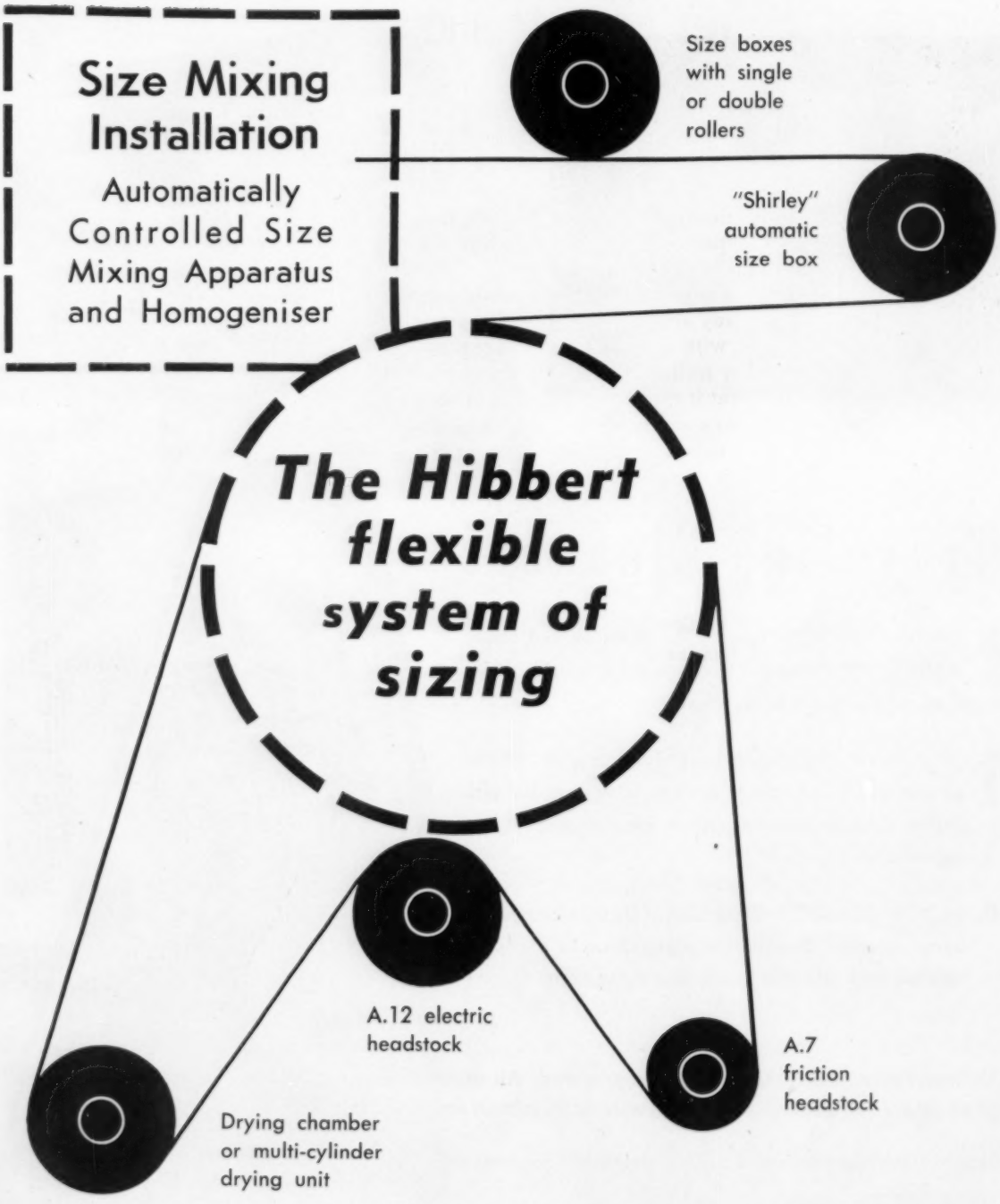
FITCHBURG, MASS. • CHARLOTTE, N.C. • ATLANTA, GA.

Established 1901

402

Size Mixing Installation

Automatically Controlled Size Mixing Apparatus and Homogeniser


Size boxes with single or double rollers
"Shirley" automatic size box
A.12 electric headstock
A.7 friction headstock
Drying chamber or multi-cylinder drying unit

The Hibbert flexible system of sizing

JOSEPH HIBBERT
AND COMPANY LIMITED
CENTURY WORKS
D A R W E N
E N G L A N D

J·H

Sole Agents in U.S.A.: ATKINSON HASERICK & CO., 211 Congress St., Boston, Mass.

For **smoother** knitting and **fewer** seconds use **GULFTEX**, the non-staining needle oil

Gulftex oil keeps needles clean and smooth, resists gumming and minimizes the build-up of deposits on needles. Result: Smoothest knitting and fewer seconds!

Gulftex also has superior non-staining characteristics that make it a valuable lubricant for any application where the staining of fabrics is a problem. It is easily applied with spray, brush or plastic squeeze bottle.

Scores of hosiery mills report excellent results with this outstanding needle oil. Let us prove that it can do a better job in your mill!

Consult the yellow pages of your telephone directory to contact your nearest Gulf office, and have a Gulf Sales Engineer call.

THE FINEST PETROLEUM PRODUCTS FOR ALL YOUR NEEDS

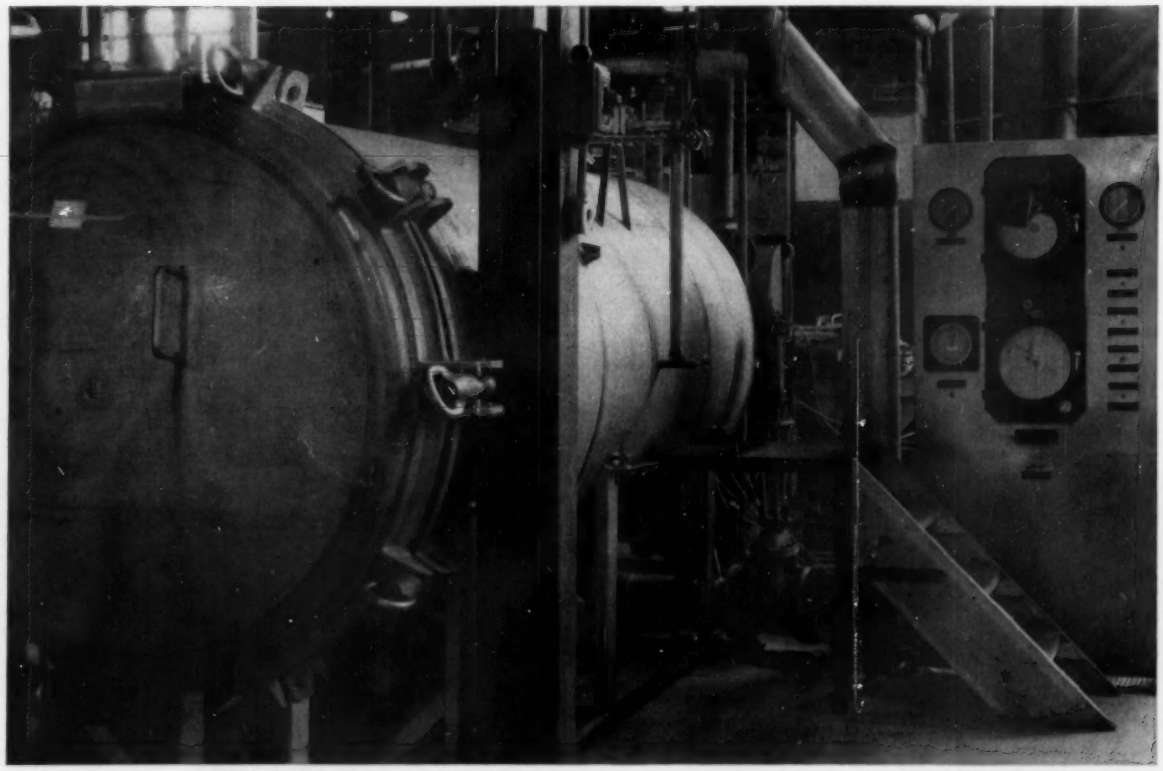
GULF

Gulf Oil Corporation • Gulf Refining Company

1822 GULF BUILDING, PITTSBURGH 30, PA.

NOW FULLY AUTOMATIC DYEING...

with this new Taylor controlled Burlington Hy-Press Dye Machine



THE Palatine Dyeing Company, at St. Johnsville, N. Y., believes in using the most modern equipment—and in the virtues of automation. In fact, all of their dyeing equipment is Taylor controlled. Pictured above is one of Burlington Engineering Company's latest machines, equipped with a Taylor FULFLEX* Time Schedule Controller. This instrument automatically regulates rate of rise, hold time and temperature, according to a pre-determined schedule. Pressure gages on either side of the controller indicate inside-out and outside-in pressures.

This Taylor control system—

- **Assures a uniformly dyed product**
- **Cuts operating costs**
- **Eliminates the hazards of manual operation**

*Trade Mark

Whether you use beam, piece, skein, package or top dyeing, there's a Taylor control system specifically designed for your needs. Just call your Taylor Field Engineer, or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY

For colors that match in materials that differ

Wherever color counts, you can count on Sandoz. You will benefit from our years of experience in meticulous color matching, from our pioneer research in the formulation of dyes for mixed fiber blends.

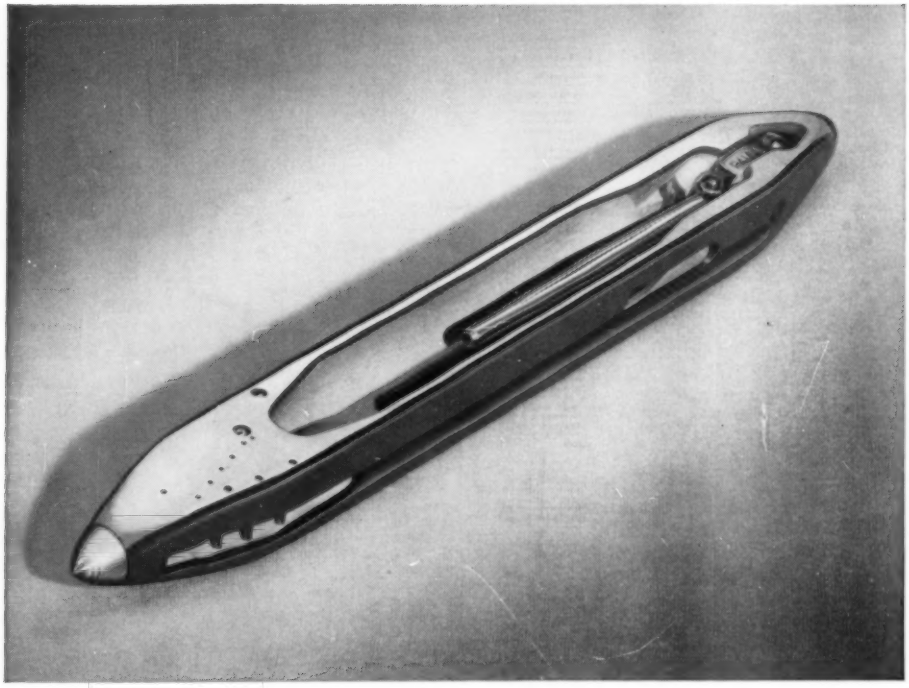
For example—if you are dyeing "Match Mates" of an Orlon* sweater and wool skirt...the Sandocryl Method of dyeing the Orlon sweater will give colors that match the wool skirt—both in daylight and artificial light.

We are specialists in specifics . . . in meeting the differing requirements of dyes for apparel, automotive and decorative fabrics. Whatever the problem—Sandoz experience is at your service, ready to produce effective and profitable results. SANDOZ CHEMICAL WORKS, INC., 61-63 Van Dam St., N. Y. 13, N. Y., ALgonquin 5-1700.

*DuPont T.M.

SANDOZ

SANDOZ THINKS AHEAD WITH TEXTILES



For long-wearing, snag-free shuttles

. . . make the facing of a Taylor material

Taylor Shuttle Fibre is strong, durable, highly resistant to abrasion. It wears smoothly and slowly . . . won't cut to rough surfaces that could snag yarn. Only half as heavy as aluminum, it machines readily to smooth finish . . . bonds easily.

Taylor Laminates, Grades L and CEF, fill many special wearing applications. Superior in physical and wearing qualities, they are easily bonded to wood.

Taylor has specialized for many years in supplying materials for textile equipment manufacturers . . . does not make any finished products for the mill. Taylor produces a complete range of vulcanized fibre and laminated plastics . . . for use in shuttles, sizing bobbins, spinning bobbins, package tubes, bearing blocks and cam followers. A wide range of characteristics is available to meet your specifications. Sheets, tubes and rods are supplied in sizes for economical production.

For the textile equipment you manufacture, it pays to specify Taylor materials for performance and economy. And for the equipment you purchase, make sure that wearing surfaces are made of Taylor materials. Write or call your nearest Taylor field office for complete facts.

TAYLOR FIBRE CO.—Plants at Norristown, Pa.—La Verne, Calif.

Call on Taylor for Materials Application Engineering

Specialists on Taylor's engineering staff are well qualified to help solve materials problems for textile equipment manufacturers. They will analyze your specific application and help you select and apply the most effective and economical grades of Taylor materials. For a consultation, write or call your nearest Taylor office.

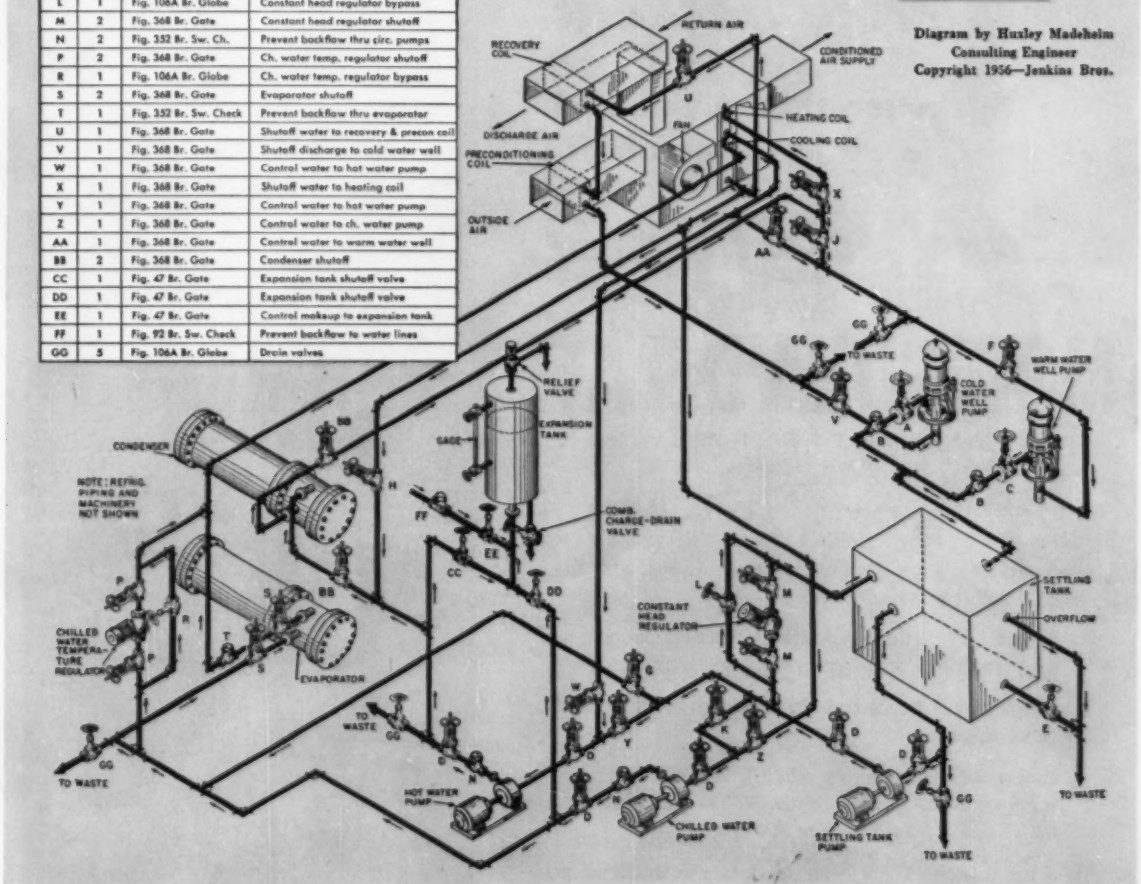
TAYLOR
Laminated Plastics
Vulcanized Fibre

JENKINS PRACTICAL PIPING LAYOUTS

77

Diagram by Huxley Madeheim
Consulting Engineer
Copyright 1956—Jenkins Bros.

Code	Quan.	Jenkins Valve	Service
A	1	Fig. 677A Br. Gate	Cold water well shutoff valve
B	2	Fig. 295 Br. Sw. Check	Prevent backflow thru well pumps
C	1	Fig. 677A Br. Gate	Warm water well shutoff valve
D	6	Fig. 368 Br. Gate	Circ. pump shutoff valves
E	1	Fig. 106A Br. Globe	Settling Tank drain valve
F	1	Fig. 368 Br. Gate	Shutoff discharge to warm water well
G	1	Fig. 368 Br. Gate	Control water to evaporator
H	1	Fig. 368 Br. Gate	Control water to condenser
J	1	Fig. 368 Br. Gate	Control water to warm water well
K	1	Fig. 368 Br. Gate	Control water to ch. water pump
L	1	Fig. 106A Br. Globe	Constant head regulator bypass
M	2	Fig. 368 Br. Gate	Constant head regulator shutoff
N	2	Fig. 352 Br. Sw. Ch.	Prevent backflow thru circ. pumps
P	2	Fig. 368 Br. Gate	Ch. water temp. regulator shutoff
R	1	Fig. 106A Br. Globe	Ch. water temp. regulator bypass
S	2	Fig. 368 Br. Gate	Evaporator shutoff
T	1	Fig. 352 Br. Sw. Check	Prevent backflow thru evaporator
U	1	Fig. 368 Br. Gate	Shutoff water to recovery & precon coil
V	1	Fig. 368 Br. Gate	Shutoff discharge to cold water well
W	1	Fig. 368 Br. Gate	Control water to hot water pump
X	1	Fig. 368 Br. Gate	Shutoff water to heating coil
Y	1	Fig. 368 Br. Gate	Control water to hot water pump
Z	1	Fig. 368 Br. Gate	Control water to ch. water pump
AA	1	Fig. 368 Br. Gate	Control water to warm water well
BB	2	Fig. 368 Br. Gate	Condenser shutoff
CC	1	Fig. 47 Br. Gate	Expansion tank shutoff valve
DD	1	Fig. 47 Br. Gate	Expansion tank shutoff valve
EE	1	Fig. 47 Br. Gate	Control makeup to expansion tank
FF	1	Fig. 92 Br. Sw. Check	Prevent backflow to water lines
GG	5	Fig. 106A Br. Globe	Drain valves



How to plan piping connections for all-year

AIR CONDITIONING WITH THE HEAT PUMP

Well water is used in the basic heat pump installation illustrated. Such a system could readily serve a building with several exterior and interior zones, which would have many air handling units. For simplicity, only one unit is shown in the diagram.

For heating demands, this system provides a closed circuit consisting of hot water pump, condenser, and heating coil. For cooling, a second closed circuit consists of chilled water pump, evaporator, and cooling coil.

During the heating season, water is supplied to the settling tank from the warm water well (about 60° F). It is circulated by the chilled water pump to the evaporator, and then to the cooling coil to provide cooling, where needed, for interior areas. The water then flows to the recovery coil, picks up heat from waste air and carries it to preconditioning coil, where it is used to preheat outside air. The resulting chilled water is discharged to the cold water well.

During the intermediate seasons, water is supplied to the settling tank from the cold water well (about 50° F). It is circulated by the hot water pump to the condenser, and then to the heating coil to provide heat, where needed, for the exterior zones. The water is then discharged to the hot water well.

During the cooling season, water from the cold water well is pumped to the settling tank, and then circulated to the evaporator and the cooling coils. It is next used to cool the condenser, and is then discharged to the hot water well. If the demand for cooling is low, and the well water cold enough, the evaporator may be bypassed.

Consultation with accredited piping engineers and contractors is recommended when planning major piping installations.

Enlarged diagram and full description of this layout free on request. Ask for Layout No. 77. Jenkins Bros., 100 Park Ave., New York 17.

JENKINS VALVES
LOOK FOR THE JENKINS DIAMOND
SINCE 1864
MADE BY JENKINS

SOLD THROUGH PLUMBING-HEATING AND INDUSTRIAL DISTRIBUTORS

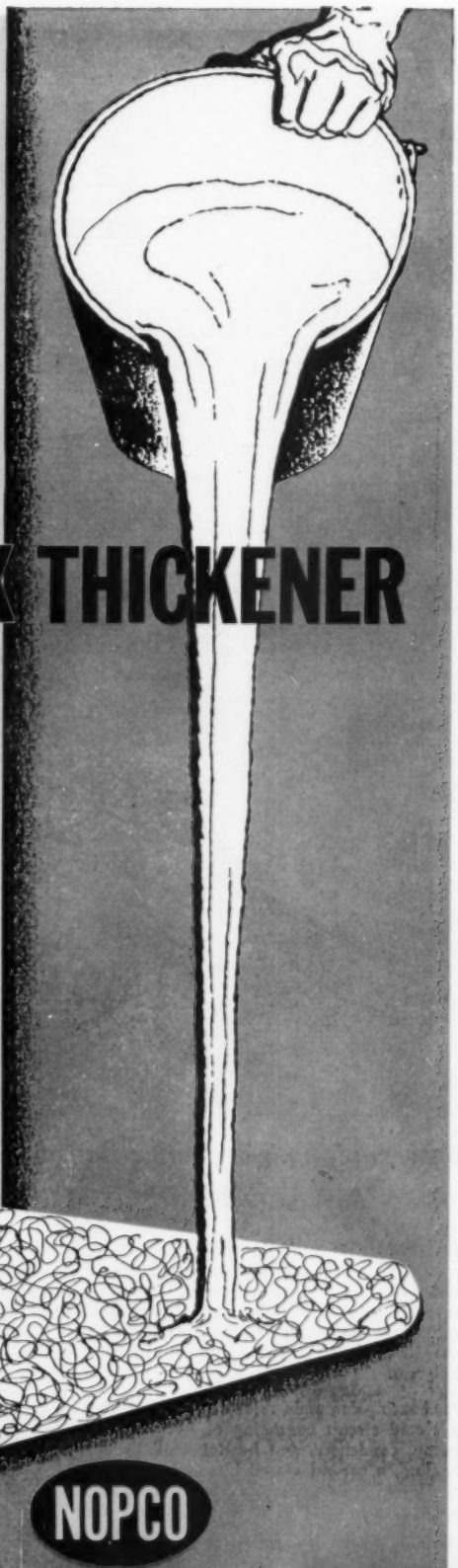
For rug and upholstery backing...

The thickener that gives high viscosity to all latex emulsions

...and pours easily!

MODICOL® VD LATEX THICKENER

A SYNTHETIC POLYMER



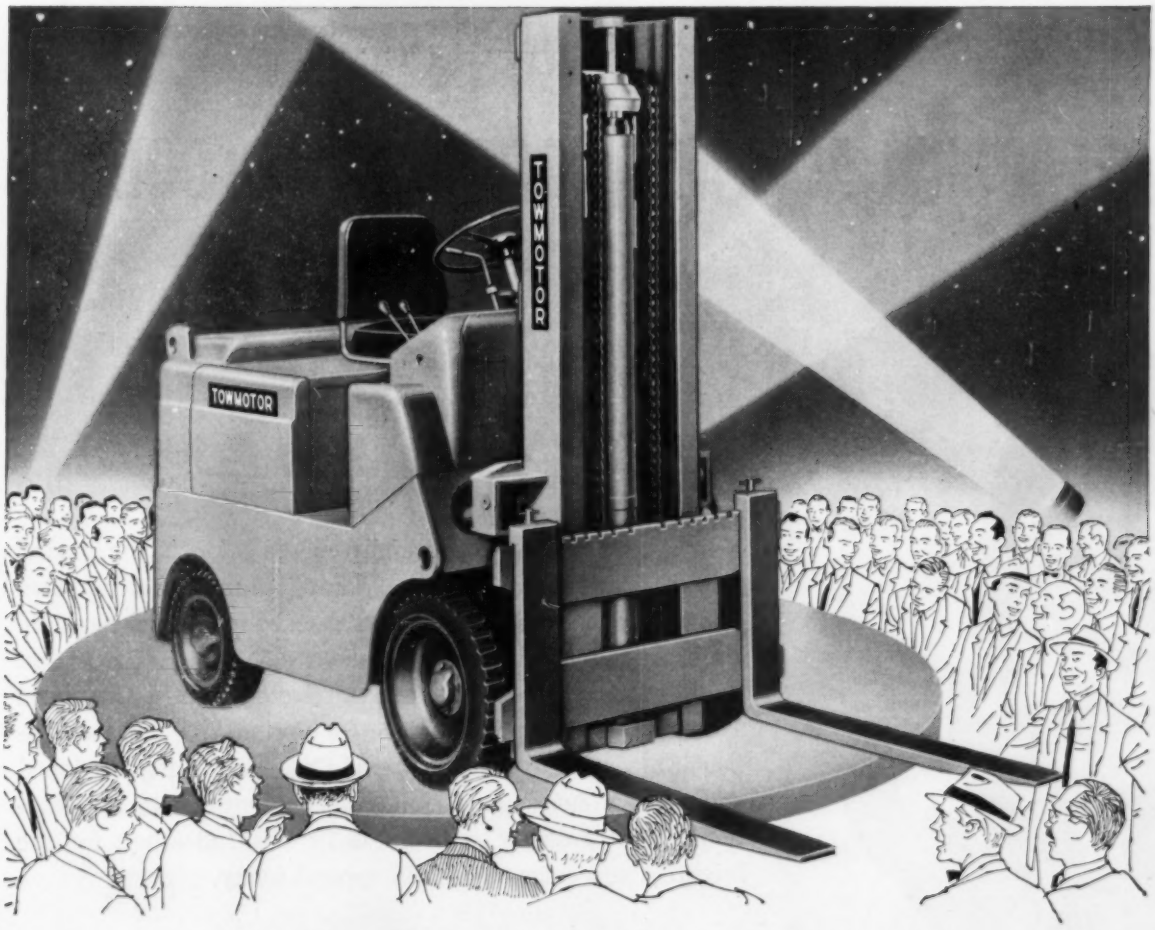
If you haven't tried Modicol VD as a thickener for your rug and upholstery-backing latex emulsions, you have some pleasant surprises coming:

1. Modicol VD is fluid, not stringy. Its easy pouring will save you time, make your operation simple.
2. Modicol VD works equally well with most synthetic latex emusions.
3. It is economical. Simply add 3 to 4% of Modicol VD to an emulsion of 30% solids. You'll find it increases the viscosity *from 25 cps to 800 cps.*
4. Your thickened emulsions maintain a uniform, gel-free, high viscosity even at very low concentrations.

And you'll find these same advantages in backing upholstery fabrics as well as rugs. Write today for bulletin on Modicol VD— the first step towards trying this remarkable thickener in your own operation. Nopco Chemical Company, Harrison, New Jersey.

NOPCO

PLANTS: Harrison, N. J. • Cedartown, Ga. • Richmond, Calif. • London, Canada



INTRODUCING THE NEW "PACE-MAKER" SERIES
TOWMOTOR FORK LIFT TRUCKS

Again Towmotor sets the pace with a new concept of power and low-cost performance in modern materials handling!

Here is an entirely new concept of fork lift truck performance—new styling, new precision operation and new maneuverability that sets the "Pace-Maker" series apart as the most significant advance in materials handling in recent years.

Towmotor engineering, carefully planned after a penetrating study of industry's needs, has created a number of unique, highly efficient features—combining to give you surprising economy for such powerful performance. The four all-new "Pace-Maker" models are designed to fit a wide range of materials handling needs, with lift capacities from 6,000 to 11,000 pounds.

Among the notable features of the new series is improved power steering now available, optionally, as original equipment. Other features offered for the first time include such outstanding advances as:

Advanced styling by a leading industrial designer.

New functional body design that provides ample underclearance, greater driving comfort, easy accessibility to engine and parts.

Exceptional maneuverability through more positive operating control and dexterous load positioning.

More powerful engines—three new power-packed types for Gasoline, Diesel or LP-Gas models.

Adjustable off-center seating assures maximum visibility and extra operating ease.

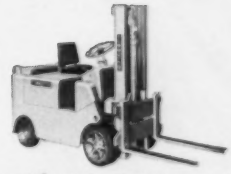
Precision steering makes manual or power operation exceptionally efficient (power steering optional).

Choice of improved "TowmoTorque" drive or standard transmission as original equipment.

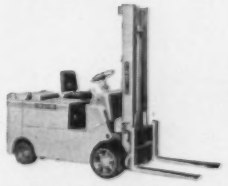
Whatever your materials handling needs, it will pay you to first look into the new, cost-saving improvements offered by Towmotor "Pace-Maker" Series Fork Lift Trucks. For more detailed information write Towmotor Corp., Div. 2206, 1226 East 152nd St., Cleveland 10, Ohio.

TOWMOTOR
THE ONE-MAN-GANG

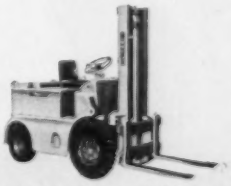
America's ***Best-Engineered*** *Fork Lift Truck*



NEW Model 600 with lifting capacities of 8000 and 9000 pounds.



NEW Model 670 with lifting capacities of 10,000 and 11,000 pounds.



NEW Model 680-P with lifting capacity of 6000 pounds.

 For more information, write direct or use Reader-Service post card.

FROM CELANESE FOR SPRING '57...

CELAPERM ACETATE COORDINATED COLORS

FOR APPAREL

Now . . . a new group of carefully chosen colors in the apparel field, in color-sealed Celaperm. They represent the combined thinking of foremost color experts, backed by market research. Here are all the important fashion colors . . . the widest possible range of basic shades . . . selected because they have a definite and significant place for Spring '57. We call particular attention to the new "Jewel-Case" Brilliants, developed and timed to help you get full *volume* potential from a promotional color group. See Celanese for the full story, for the brightest new color outlook in apparel today.

OFFICIAL CELAPERM COLORS FOR APPAREL:

Beige-Brown Group	C-29 Beige C-58 Golden Topaz C-27 Mink Brown C-50 Jungle Brown C-63 Brown Pearl	**Yellow Group**	C-25 Yellow C-59 Canary Diamond
Pink Group	C-42 Pink Glow C-30 Pink C-60 Flamingo	**Blue-Green Group**	C-28 Dark Green C-44 Aqua C-24 Light Blue N-957 Medium Blue
Basic Group	C-20 Red C-57 Pewter C-48 Black C-51 Navy C-22 Royal	**Jewel-Case Brilliants**	C-53 Crown Gold C-56 Imperial Jade C-55 Orange Sapphire C-52 Persian Turquoise C-54 Ruby Scepter

FEATURE STORY JEWEL-CASE BRILLIANTS: BRIGHTEST

FOR APPAREL AND HOME FURNISHINGS!

FOR HOME FURNISHINGS

Now . . . the broadest range of coordinated home furnishings colors in color-sealed Celaperm. They're the result of months of working with the home furnishings and color authorities. They offer new style stimulus in both volume and decorator markets. See highly promotional "Jewel-Case" Brilliants with an Oriental influence. See exciting interpretations of traditional colors. See clear, softened pastels. See basic staples. See how designers can use an entire coordinated range to style a complete line in Celaperm. See the whole new color picture in home furnishings at Celanese.

OFFICIAL CELAPERM COLORS FOR HOME FURNISHINGS:

Basic Group	C-20 Red C-51 Navy C-48 Black C-22 Royal	**Intermediate Group**	C-58 Golden Topaz C-53 Crown Gold C-62 Rose Dust C-61 Sea Mist C-57 Pewter C-34 Rose
Pastel Group	C-29 Beige C-24 Light Blue C-42 Pink Glow C-44 Aqua C-25 Yellow C-46 Mist Green	**Jewel-Case Brilliants**	C-52 Persian Turquoise C-55 Orange Sapphire C-56 Imperial Jade C-54 Ruby Scepter

Celanese

CORPORATION OF AMERICA, NEW YORK 16, N. Y. Celanese® Celaperm®

COLOR IDEA IN APPAREL AND HOME FURNISHINGS!

have **you** tried the **Kyros?**

Two synthetics in our line of textile products—Kyro AC and Kyro EO—are scoring some interesting performance records in well known textile mills. A quick review of their unusual characteristics may suggest spots in your mill where the Kyros can bring you important advantages.

Kyro AC

CHARACTERISTICS: A clear, amber-colored liquid—a new type of modified amine condensate product with soap-like action on wool.

A versatile detergent . . . a fast rinser . . . consistently gives low residual oil contents with all types of wool oils.

Replaces soap completely in normal fulling and scouring with substantial savings in washer time and hot water. Also, more efficient than soap in removing wool oils.

SUGGESTED USES: Outstanding for "acid" fulling and scouring wool fabrics carbonized in the grease, producing a soap type finish.

Repeatedly, Kyro AC has proven superior in cutting fulling time, eliminating wrinkles, minimizing stretch-out in the washer and dye kettle, and producing fabrics of noticeably better body and cover.

Batch or dolly scouring of fabrics which are not fulled.

Fulling and scouring color sensitive stock-dyed fancy woolens.

Fulling and scouring papermakers' felts.

Ideal for fulling and scouring sweater bodies—cashmere, lamb's wool and blends. Retains the natural softness of cashmere.

Wool yarn scouring.

Package scouring Orlon-Wool Worsted Jersey materials.

Kyro EO

CHARACTERISTICS: A new nonionic of the alkyl phenol polyethylene oxide condensate type. A clear liquid with a pH of about 7.5.

A superior detergent, wetting and re-wetting agent and dye assistant on all types of fibers.

Safe for use with acids, alkalies, salts, oxidizing agents, reducing agents, resins, water repellents and softening or finishing agents—cationic, anionic and nonionic types.

High dispersive action on lime soaps—minimizes odor and discoloration troubles.

SUGGESTED USES:

COTTONS. Wetting out raw stock yarns and piece goods prior to dyeing.
Soaping off raw stock, yarns and piece goods.
Kier boiling yarns and piece goods.
Bleaching package yarns and piece goods.
Removing unfixed surface resins and residual catalyst from piece goods.
Improving ginning of raw stocks.
Rust removal from piece goods.

RAYON AND THE NEW SYNTHETICS. An excellent anti-static agent.
An effective detergent for removing oils, starches and sizing materials in the boil-off.
For wetting out prior to dyeing.
For soaping-off yarns and fabrics.

WOOL. Scouring raw stock and yarns.
Backwashing and dyeing of tops.
Carbonizing raw stock or fabrics.

PROCTER & GAMBLE
Textile Finishes Sales Dept. Cincinnati, Ohio

Makers of Olate, Proxols, Orvus and Kyro products for smoother textile processing.

Mount Hope
Cloth Handling SYSTEM

You too will be "pleased with its performance". Read what DAN RIVER MILLS says about it . . .

EXPANDERS

CONTINUOUS ROLL FEEDS

EXPANSION GUIDES

GUIDERS

CLOTH OPENERS

SLACK SELVAGE ELIMINATORS

SKEWED WEFT STRAIGHTENERS

BOWED WEFT STRAIGHTENERS

ADJUSTABLE TENSION SQUEEZERS

OVERHEAD SHEAVES

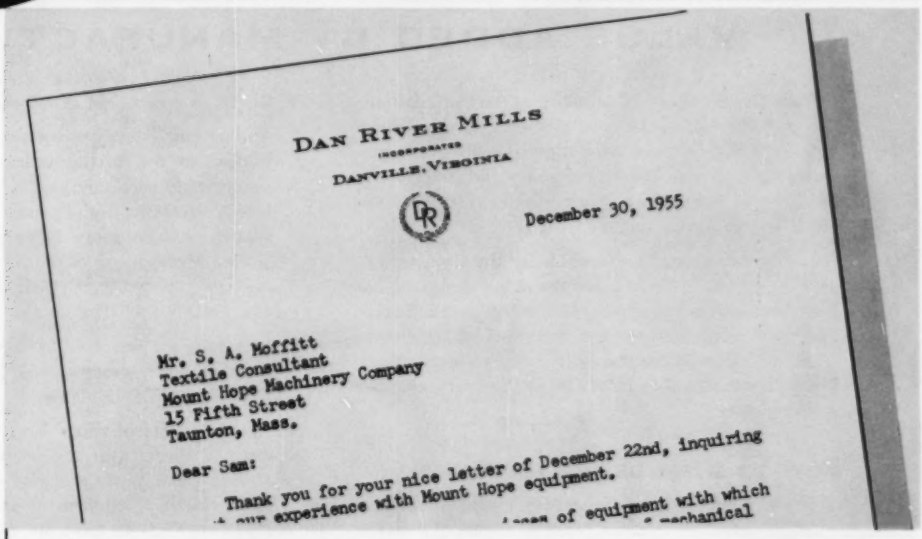
DETWISTER TURNTABLES

DETWISTER SWITCHES

PLAITERS

DRAW ROLLS

POTEYES



DAN RIVER MILLS
INCORPORATED
DANVILLE, VIRGINIA

December 30, 1955

Mr. S. A. Moffitt
Textile Consultant
Mount Hope Machinery Company
15 Fifth Street
Taunton, Mass.

Dear Sam:

Thank you for your nice letter of December 22nd, inquiring
[illegible] our experience with Mount Hope equipment.
[illegible] of equipment with which
[illegible] mechanical

"We have a number of various pieces of equipment . . . ten sets of mechanical cloth guiders, approximately 100 Mount Hope "Free Wheeling" Expanders, overhead reels, which open the cloth through Mechanical Guiders.

At our Riverside Division we use several automatic turntables, reels, openers, guiders and plaiters . . .

We have found Mount Hope Equipment to be very satisfactory, requiring the minimum of repair, and we are pleased with its performance . . ."

— says Basil D. Browder, Executive Vice President.

Send for our write up — *"Mt. Hope Cloth Handling System"* which describes in detail the System's many applications and how it can save money and improve quality.

for
MAXIMUM PRODUCTION
LOWER COST
MINIMUM SECONDS
use the complete
MOUNT HOPE SYSTEM

MOUNT HOPE
MACHINERY COMPANY

Originators of Modern Expanders
Leaders in Cloth Handling Equipment
151 Fifth St., Taunton, Mass.

Southern Repair Shop, Charlotte, N. C.

A Message to Management about DRYING EQUIPMENT

No. 1 in a Series

VALUE ADDED BY MANUFACTURE

The Department of Commerce of the United States spends millions of dollars to find out *how much* value industry adds to raw materials in the manufacturing process. Industry itself (and the textile industry in particular) can profit by according the same respect to this *value*.

Let's take a specific example. By the time cotton, wool or synthetic fibres reach the dryer their original "raw" value has been multiplied many times. Therefore they merit the best and most careful treatment. This in turn calls for the best in drying equipment. No mill can afford to take any unnecessary chances at this point.

HOW TO SELECT DRYING EQUIPMENT

If you are looking for the best in drying equipment, we submit that the same signposts which point to the best doctor, lawyer, or what-have-you will also point unerringly to the best drying equipment. We refer to such things as reputation, record of achievement, specialization and recognition. The first signpost which points to A & G Drying Equipment is —

REPUTATION

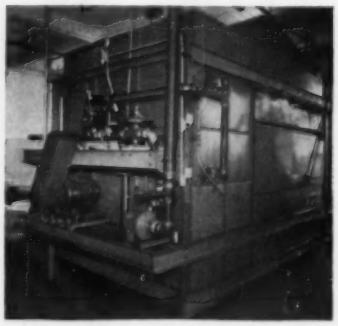
In the past we have been content to let our customers advertise for us, by word-of-mouth. Perhaps that has been a mistake for, while companies go on and on, executives within a company do change and much of the earlier experience of the company is thus lost. However, that our customers have really done a job for us is evidenced by the following facts:

1. We have grown and prospered for 36 years.
2. Among our steady customers are most of the leaders in the textile industry who use drying equipment: such companies as Union Bleachery, Dan River Mills, Inc., Springs Cotton Mills (Grace Bleachery), Southern Bleachery & Print Works, United Merchants & Manufacturers, Inc., Pepperell Manufacturing Co., Lyman Printing & Finishing Co., Inc., Riegel Textile Corporation, Cone Mills.
3. More than a few concerns, when equipping new mills or when modernizing, have bought A & G Dryers exclusively.
4. These loyal customers have favored us with so much business over the years that we have been able to "stick to our knitting" — by making drying and ventilating equipment *exclusively* — by specializing. Thus we have not diluted our talents nor dissipated our energies, and our customers have benefited accordingly.

Believe us, the foregoing is not idle boasting. It is a sincere statement of fact which we invite you to prove to your own satisfaction. Write us for a list of representative customers. Then write them and ask them what their experience has been with A & G Drying and Ventilating Equipment. We'll stand or fall on the outcome.

NOTE: Next month we will discuss another "signpost" which points to A & G Drying and Ventilating Equipment as the BEST. We plan to reprint this series of ads and will be glad to put you on our mailing list, free of all obligations, if you so desire. Just send us your name and title on your company letterhead.

A & G CURING UNIT One of many in a complete line of drying, baking and curing units. May be heated by steam, gas, or electricity with all approved safety devices. The efficient heat transfer arrangement in this equipment is one of many features which has contributed to A & G REPUTATION.



ANDREWS and GOODRICH, Inc.

336 Adams Street, Boston (Dorchester), Mass.

Southern Representatives: McSpadden & Scantland, Charlotte, N. C.

There's a Sonoco **TUBE** for every textile need!

And SONOCO has been a dependable source for over 50 years!

SONOCO produces spiral, convolute, parallel or drawn tubes in sizes ⅛" to 36" I.D., in any practical length and wall thickness. Available in colors, various surfaces, treated, impregnated, perforated, scored, notched, printed and with crimped or burnished ends.

For natural or synthetic yarns and cloth—for winding, twisting and other processes. Manufactured to meet individual requirements.

Our sales-engineers can help you with any textile tube problem!

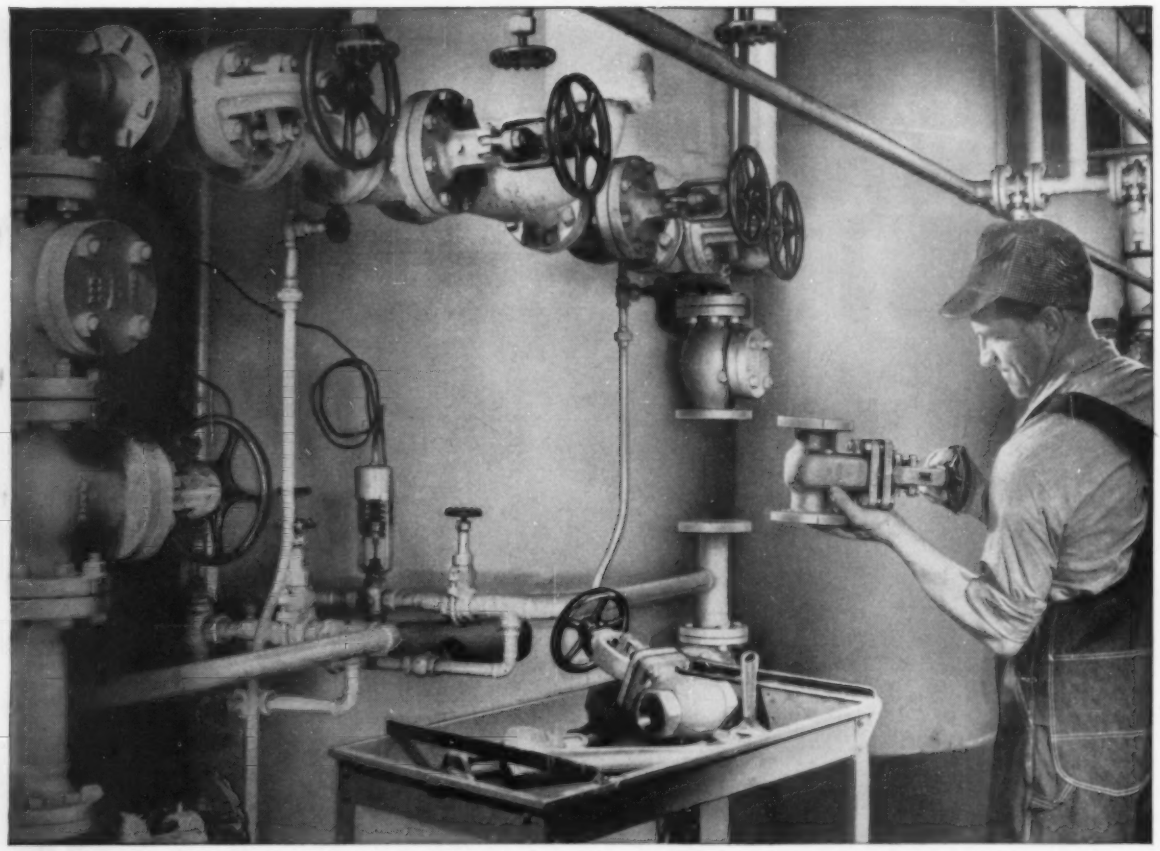
sonoco — SERVES THE TRADE — PAPER CARRIERS
REG. U.S. PAT. OFF.

SONOCO PRODUCTS COMPANY

MAIN OFFICE — HARTSVILLE, S. C.

MYSTIC, CONN. • AKRON, IND. • LOWELL, MASS. • PHILLIPSBURG, N. J.
LONGVIEW, TEXAS • PHILADELPHIA, PA. • LOS ANGELES, CAL.
GRANBY, QUEBEC • BRANTFORD, ONT. • MEXICO, D. F.

DEPENDABLE SOURCE OF SUPPLY



Corrosion meets match in Crane 18-8 SMo and Craneloy 20 valves

It's unanimous! These Crane valves for the process industries were *especially designed* of Crane alloys to cope with costly corrosion and to cut replacement costs.

The gate valves feature a simple, split-wedge disc construction which permits discs to rotate freely within guides and to seat tightly at all points on the seat perimeter. The free movement of the disc, plus uniform seating and unseating loads, minimizes galling and seizing, reduces wear and allows smooth operation under all conditions.

Globe and angle valves now feature a modified plug-type disc that combines the advantages of the easier seating of the narrow ball-to-flat seat and the high resistance of the wider plug-type disc to corrosion, erosion and cutting. In addition, these valves offer a new swivel disc-stem connection that seats the disc squarely every time. Minimum clearance eliminates vibration.

These valves are available in 18-8 SMo and Craneloy 20 . . . in gate, globe, angle and check patterns . . . ½" to 6" . . . screwed or flanged ends. Rated 150 p.s.i. at 500° F.—230 p.s.i. at 100° F. *For more detailed information*, confer with your CRANE representative or write to the address below for the 12-page circular AD-2080.

Split-wedge disc gate.

Swivel disc globe.

Crane trunnion-mounted split-wedge disc combines the benefits of free rotation with uniform seat load pressure.

New swivel disc stem connection in globe and angle valves permits the disc to swivel freely on contact with seating surfaces.

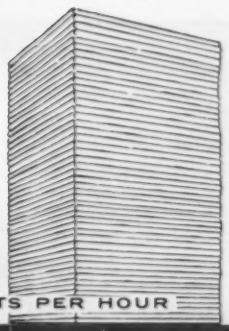
CRANE VALVES & FITTINGS

PIPE • KITCHENS • PLUMBING • HEATING

Since 1855—Crane Co., General Offices: Chicago 5, Ill. Branches and Wholesalers Serving All Areas

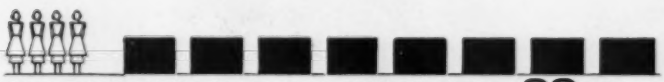
NEW WARNER & SWASEY SYSTEM
2 shift production

1 OPERATOR PER SHIFT + 6 MACHINES = 50 BLANKETS PER HOUR



WARNER & SWASEY-SULZER WEAVING MACHINES® PILE UP BLANKET PROFITS *For Litchfield Woolen Mills*

OLD SYSTEM
3 shift production



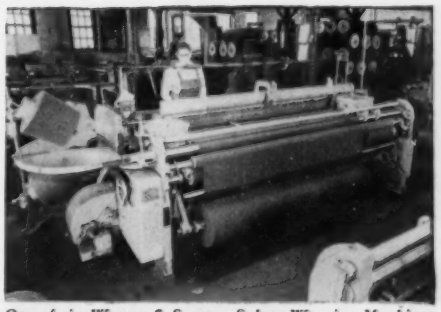
4 OPERATORS PER SHIFT + 8 MACHINES = 33 BLANKETS PER HOUR

PROFITABLE PRODUCTION of inexpensive woolen blankets, like those made by The Litchfield Woolen Company, requires keeping a sharp eye on costs, and use of the most modern, efficient equipment available. That's why this small mill installed 6 new Warner & Swasey-Sulzer Weaving Machines.

These 6 machines, operating just two shifts, match the production that previously required 8 looms operating 3 shifts. And all 6 machines require only one operator each shift where 4 weavers per shift were previously needed—cutting labor costs 83%! Quality of blankets has been improved in appearance and feel, and "seconds" have been reduced 50%! The machines' big package-type filling supply has cut waste to the bone—bobbin bunches are completely eliminated by their direct-drawing shuttles—with savings on waste equivalent to 6,000 blankets per year! Operators quickly mastered the new machines and much prefer their simple operation. At present production rates the machines will pay for themselves in 4 years!

Modernization with Warner & Swasey-Sulzer Weaving Machines will boost production while cutting costs for you, too. Call in our Field Engineer and get the full details.

®Reg. U. S. Pat. Off.



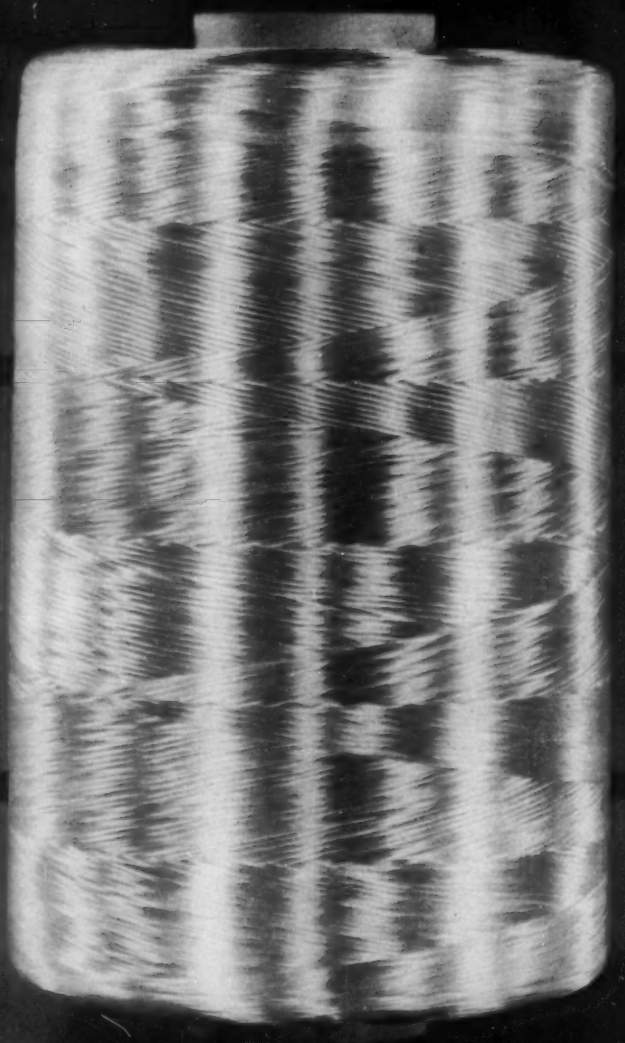
One of six Warner & Swasey-Sulzer Weaving Machines cutting weaving costs at The Litchfield Woolen Mills Company, Litchfield, Minnesota.

SALES OFFICES

Main Office and Factory: 5701 Carnegie Ave., Cleveland 3, Ohio
61 Rivulet St., North Uxbridge, Mass. 121 11th St., N.E., Atlanta 3, Ga.
Suburban Square Building, Ardmore (Philadelphia), Pa.
624 Pecan Avenue, Charlotte 1, N. C.

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS . . . WITH A WARNER & SWASEY

NOW, brought to you



*caprolan**

NYLON HEAVY YARNS

Allied Chemical's new Caprolan heavy yarns are of particular interest to makers of:

Heavy Duck • Industrial Slings • Fire Hose • Cords & Braids
Upholstery Fabrics • Webbings • Conveyor Belt Fabrics
Rope & Twine • Tapes & Belts • Carpets & Rugs

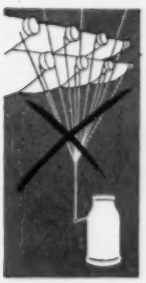
* TRADE-MARK

exclusively by Allied Chemical...Caprolan®!

Nylon Heavy Yarns

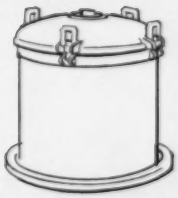
A Completely New Class of Durable Textile Yarns Available in 2,100, 2,500, 5,000 and 15,000 Denier

Mills report these advantages:



1. Cuts Plying Costs! Supplied in the total deniers you need, Caprolan nylon heavy yarns are engineered to your specifications without plies. No need to inventory costly finer deniers. Heavy yarns with nominal twist are supplied on knotless 10-pound parallel nonreturnable tubes.

2. Cuts Heat-Setting Cycles! Another money-saving advantage of these heavy yarns is that heat-setting cycles can be materially shortened because of Caprolan's workability with heat.



3. Minimizes Dyeing Problems! Heavy nylon constructions are much easier to dye when Caprolan heavy yarns are used. Allied's new fiber has a remarkable affinity for all classes of dyestuffs.

Other Heavy Yarns Can Be Engineered to Your Specifications In a Range from 2,000 to 50,000 Denier!

Now, from Allied Chemical—an important new tool for the textile industry—nylon heavy yarns engineered to your specifications! This completely new class of durable textile yarns eliminates need to ply multiple ends of finer deniers to achieve a higher total effect.

Caprolan heavy yarns are versatile, too. Whether you make duck, webbings, carpet, upholstery or any other type of heavy nylon fabric these heavy yarns will find a place in your mill. They are especially effective where toughness and high impact strength are important considerations.

These nylon heavy yarns are made exclusively by Allied Chemical. In addition to all of the known qualities of nylon, Caprolan heavy yarns offer such plus values as affinity for all classes of dyestuffs, *deep* dyeing and uniform level shades.

These new heavy yarns already are in commercial use in important mills and evaluation programs are under way in many others. If you would like more information, technical assistance, or would like to evaluate Caprolan heavy yarns in your own mill, write:

Fiber Sales and Service

NATIONAL ANILINE DIVISION

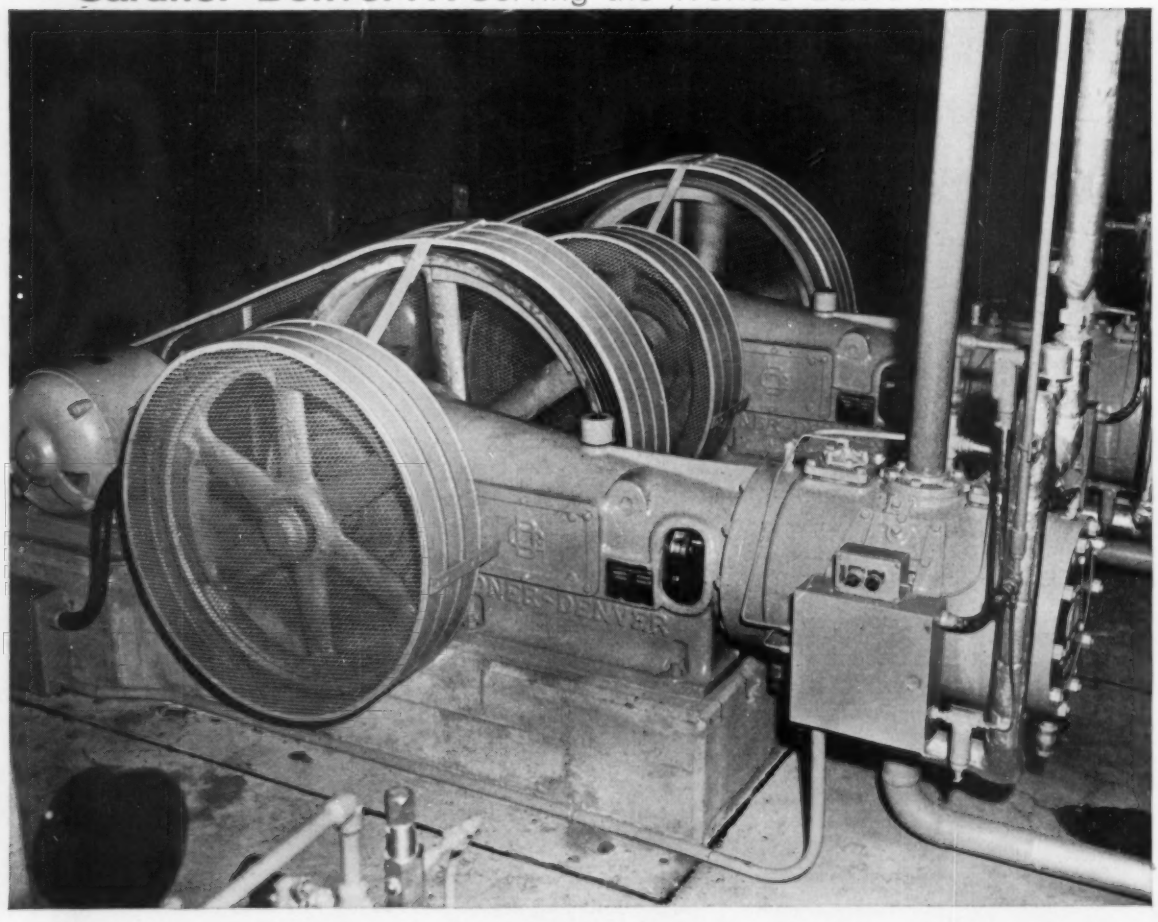
Allied Chemical & Dye Corporation

261 Madison Ave., New York 16, N. Y.

Branch Offices—Jefferson Standard Building, Greensboro, N.C., 200-204 S. Front St., Philadelphia 6, Pa., 15 Westminster St., Providence 3, R.I.

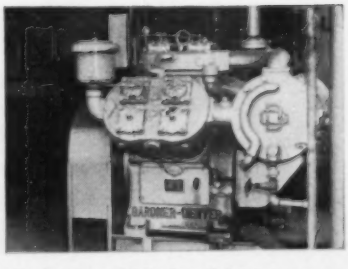
SERVING THE TEXTILE INDUSTRY SINCE 1879

Gardner-Denver . . . Serving the World's Basic Industries



Built for the 168-hour week . . . Gardner-Denver RX Compressors

That's *continuous* service . . . and it goes on year after year in all sorts of plants where Gardner-Denver RX's occupy the compressor room. Bearings, valves and other moving parts are engineered to keep on the go . . . seldom require more than brief inspection halts. Bulletin HAC-40 gives details on RX models from 89 to 1292 cfm, for pressures from 15 to 150 psi. Write today.



Another popular industrial compressor . . . the compact, efficient Gardner-Denver WB. 142 to 1150 cfm.

GARDNER - DENVER

THE QUALITY LEADER IN COMPRESSORS, PUMPS, ROCK DRILLS AND AIR TOOLS FOR CONSTRUCTION, MINING, PETROLEUM AND GENERAL INDUSTRY

Gardner-Denver Company, Quincy, Illinois

In Canada: Gardner-Denver Company (Canada), Ltd., 14 Curity Avenue, Toronto 16, Ontario
Atlanta, Ga.; Birmingham, Ala.; Knoxville, Tenn.; Washington, D. C.
New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.; New Orleans, La.; Louisville, Ky.

Armour Energetic® cuts crocking and costs at Standard-Coosa-Thatcher..

..and will at your mill!

Standard-Coosa-Thatcher uses Energetic to minimize crocking on this naphthol-dyed yarn—and for maximum detergency and economy in other dyeing and bleaching processes.

"None of the synthetics had solved our crocking problem—until we tried Armour Energetic. That did it, and we've been using Energetic successfully in our dyeing and bleaching processes for the past three years." These are the words of Mr. H. H. Eagar, manager of quality control and development for Standard-Coosa-Thatcher Company. Energetic has proven itself in his mill and in many, many others—why not try it in *yours?*

Here's how Energetic will cut costs for you! A powerful, concentrated nonionic synthetic detergent, Energetic is supplied 90% *active*—it takes only one pound to do the job of 3 full pounds of anionics. This adds up to a savings per job of about 21¢ with every pound of Energetic you use. And you can add builders to Energetic to cut costs even more.

Test Energetic now by this trial-order plan! Send the coupon for free test samples of Energetic and complete booklets on all three Armour Energetic products. Or, for quick delivery on a 5-gallon trial drum, place an order right in the coupon below. Start reducing your scouring problems and costs now!

FREE SAMPLE AND TRIAL ORDER BLANK

Armour Industrial Soap Department
Armour and Company, 1355 W. 31st St., Chicago 9, Ill.

Please send me:

☐ FREE! Sample of ENERGETIC
____ 5-gallon drums of ENERGETIC @ $13.86 each
☐ Free Booklet, ENERGETIC and ENERGETIC S
☐ Free Booklet, ENERGETIC W-100 (Instant wetting agent)
☐ Bill me ☐ Check enclosed ☐ Money Order

Your money back if not completely satisfied. For refund, simply ship us unused portion.

Name _____ Title _____

Firm _____

Address _____

City _____ Zone ____ State _____

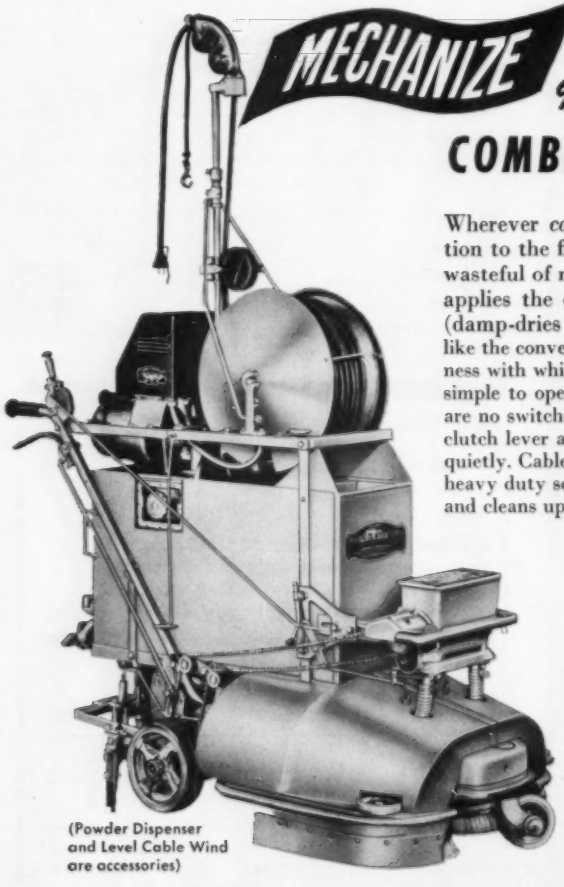
ARMOUR

Industrial Soap Department

T6

Let's not clean away dollars and man-hours with costly, inadequate floor care

MECHANIZE your floor-cleaning with a COMBINATION SCRUBBER-VAC!



(Powder Dispenser and Level Cable Wind are accessories)

Wherever *combination-machine-scrubbing* is the practical solution to the floor-cleaning problem, any lesser, slower method is wasteful of money and manpower. A *Combination Scrubber-Vac* applies the cleanser, scrubs, flushes if required, and picks up (damp-dries the floor)—*all in one operation!* Maintenance men like the convenience of working with this single unit . . . the thoroughness with which it cleans . . . and the features that make the machine simple to operate. It's *self-propelled*, and has a *positive* clutch. There are no switches to set for *fast* or *slow*—slight pressure of the hand on clutch lever adjusts speed to desired rate. The powerful vac performs quietly. Cable reel is self-winding. *Model 213P Scrubber-Vac* at left, for heavy duty scrubbing of large-area floors, has a 26-inch brush spread, and cleans up to 8,750 sq. ft. per hour!

Finnell makes *Scrubber-Vac Machines* in a full range of sizes—for small, vast, and intermediate operations. From this complete line, you can choose the size that's exactly right for *your* job (no need to *over-buy* or *under-buy*). It's also good to know that you can lease or purchase a *Scrubber-Vac*, and that *a Finnell Floor Specialist and Engineer is nearby* to help train your maintenance operators in the proper use of the machine . . . to recommend cleaning schedules for most effectual care . . . and to make periodic check-ups. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1906 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

Originators of Power Scrubbing and Polishing Machines

Everything FINNELL for Floor Care

BRANCHES IN ALL PRINCIPAL CITIES

a package for "PEEPERS" to sell more sleepers!

Wrapped in SHELLENE polyethylene

Women like to see your textile product – and feel it, too. Shellene polyethylene is the clear, tough film that shows your product to best advantage and stands up to roughest handling, yet is so soft and supple the customer can actually feel the fabric texture through it.

Add to the appeal of Shellene the excitement of Shellmar-Betner's colorful gravure and flexigraphic printing – and you have a textile package that really sells.

Call us today. We'll be glad to tell you about the best materials and the best printing for textile packaging.

*Du Pont's registered trademark for its polyester film.

Remember!

we convert and print

- POLYETHYLENE ROLL AND BAGS
- POLY, CELLO, VINYL SHEET WRAPS
- SHELL-PLI CARTON OVERWRAPS
- CELLO-POLY WRAPS
- MYLAR * BAGS AND SHEETS

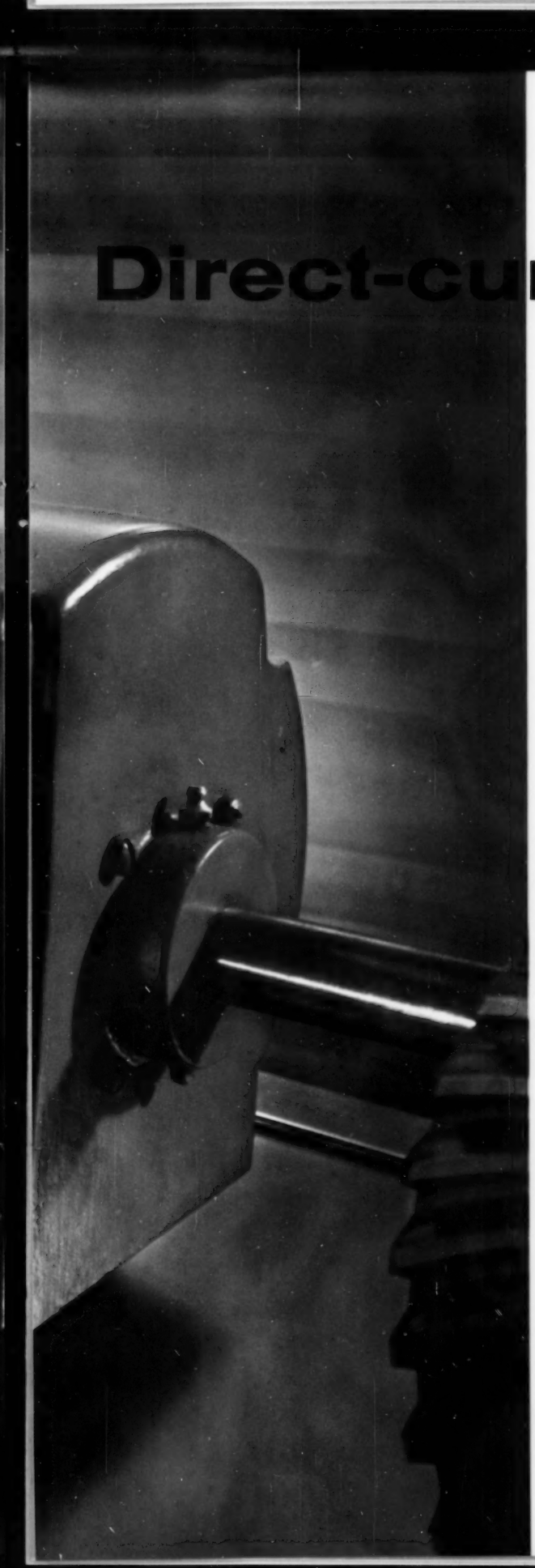
CONTINENTAL CAN COMPANY

SHELLMAR-BETNER DIVISION

QUALITY PRINTERS AND CONVERTERS OF FLEXIBLE PACKAGING MATERIALS

GENERAL ELECTRIC ANNOUNCES...

NEW Industrial



Direct-current Motor

KINAMATIC* a new standard in direct-current motors, gives your machines wider speed ranges, greater output

To meet modern industrial needs for faster, more automatic, more continuous production, General Electric has designed an entirely new direct-current motor—the d-c Kinamatic.

Designed for Automation—Now, a direct-current motor has been designed for the modern job it has to do—either as individual motor drive or in regulating systems. The new General Electric d-c Kinamatic motor supplies the wide speed range and versatility required for today's manufacturing methods. It is designed for the close control of machines and split-second timing of processes essential to higher output.

Accelerated Production—The new d-c Kinamatic motor will modernize your equipment, give it increased power, higher speeds, greater output capacity. With the quick-acting G-E Kinamatic motor, your machines will process a greater variety of products . . . faster . . . easier . . . and with less maintenance and spoilage.

More Powerful—By combining advanced design with improved materials and manufacturing techniques, General Electric engineers have packed more power into the entire Kinamatic line. The powerful Kinamatic motor, with new stamina and durability, is ready to become one of your most effective weapons for keeping costs down, for meeting competition, for boosting productivity levels.

Engineering Help—Industrial specialists in 149 conveniently located General Electric Apparatus Sales Offices have the complete story on how the new d-c Kinamatic motors and generators can benefit your operation. For full details, contact your G-E Sales Representative, or write for Bulletin GEA-6355. *Direct Current Motor and Generator Department, General Electric Company, Erie, Pennsylvania.* 813-1

* Trade Mark of the General Electric Company

Progress Is Our Most Important Product

GENERAL ELECTRIC

ENERGY SAVER

NEW LIGHTWEIGHT YALE HAND TRUCK HANDLES MORE TONNAGE PER DAY

The new Yale Model A Hydraulic Hand Lift Pallet Truck is ideal for the textile industry. Here's why:

(1) It weighs only 200 lbs. and therefore is lighter than any other hand truck with a capacity of 2,000 lbs. This means a drastic reduction in deadweight... *less* pulling effort and operator fatigue... *more* trips per shift. (2) The pallet wheel linkage is mounted high in the forks and thus provides 50% more underclearance than most other hand trucks. (3) The dual articulated steering wheels give greater ease of steering and maximum load stability. This adds up to easier maneuverability even when the truck carries capacity loads.

Speed up short-distance hauling in your mill or warehouse with these new Yale Hand Trucks. Use them alone or as an integral part of your materials handling system. For additional information, write the Yale & Towne Mfg. Co., Philadelphia 15, Pa., Dept. 996.

SPECIFICATIONS:

- **Capacity: Hydraulic Lift up to 2000 lbs.**
- **Weight with 48" forks: 200 lbs.**
- **Ground clearance: Lowered — 1⅜"; Raised — 5⅜".**
- **Handle: Balanced Spring Type.**
- **Fork Lengths: 30" to 72" in 6" increments.**
- **Bearings: Front wheels—Tapered Roller Bearings; Rear wheels—Ball Bearings.**

YALE*

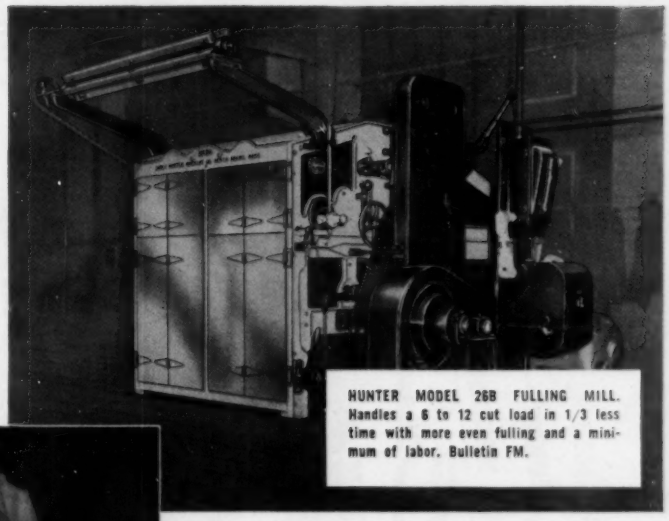
*REG. U.S. PAT. OFF.

INDUSTRIAL LIFT TRUCKS AND HOISTS

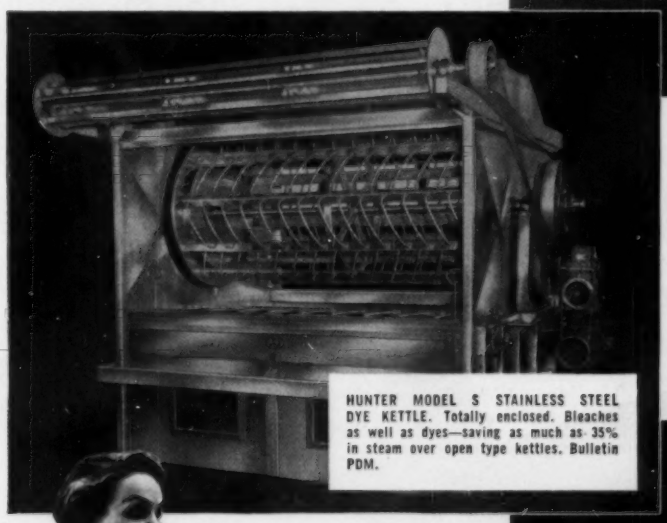
Gas, Electric, Diesel & LP-Gas Industrial Trucks • *Worksavers* • Warehousers • Hand Trucks • Hand and Electric Hoists

HUNTER

Wet Finishing Equipment Is Big In The Profit Picture At LEBANON MILLS



HUNTER MODEL 26B FULLING MILL. Handles a 6 to 12 cut load in 1/3 less time with more even fulling and a minimum of labor. Bulletin FM.

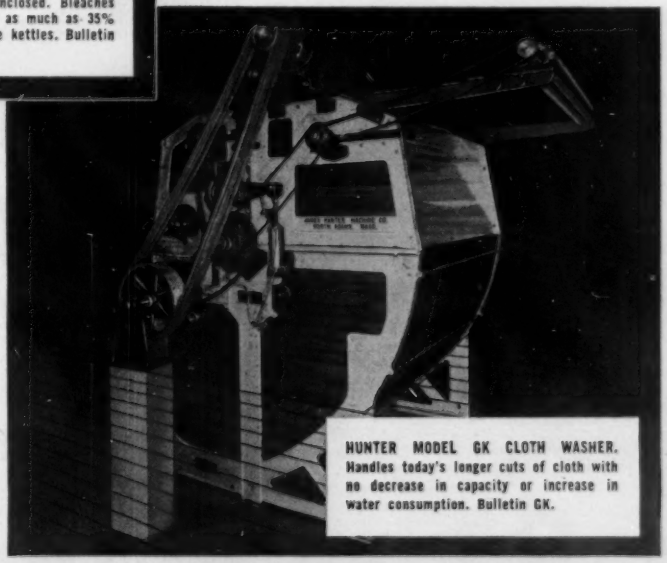


HUNTER MODEL S STAINLESS STEEL DYE KETTLE. Totally enclosed. Bleaches as well as dyes—saving as much as 35% in steam over open type kettles. Bulletin PDM.

For Wool, Cotton, Blends And ALL Synthetics...

Hunter Wet Finishing Machines, at Lebanon and leading mills everywhere, are proving their importance in the modern textile plant's economy. Counterbalancing mounting labor and materials costs, their speed, efficiency and quality output actually make bigger profit margins possible.

HUNTER IS IN THE PROFIT PICTURE WITH A COMPLETE LINE OF DRYING AND FINISHING EQUIPMENT FOR *EVERY* FABRIC REQUIREMENT!



HUNTER MODEL GK CLOTH WASHER. Handles today's longer cuts of cloth with no decrease in capacity or increase in water consumption. Bulletin GK.

JAMES HUNTER MACHINE COMPANY

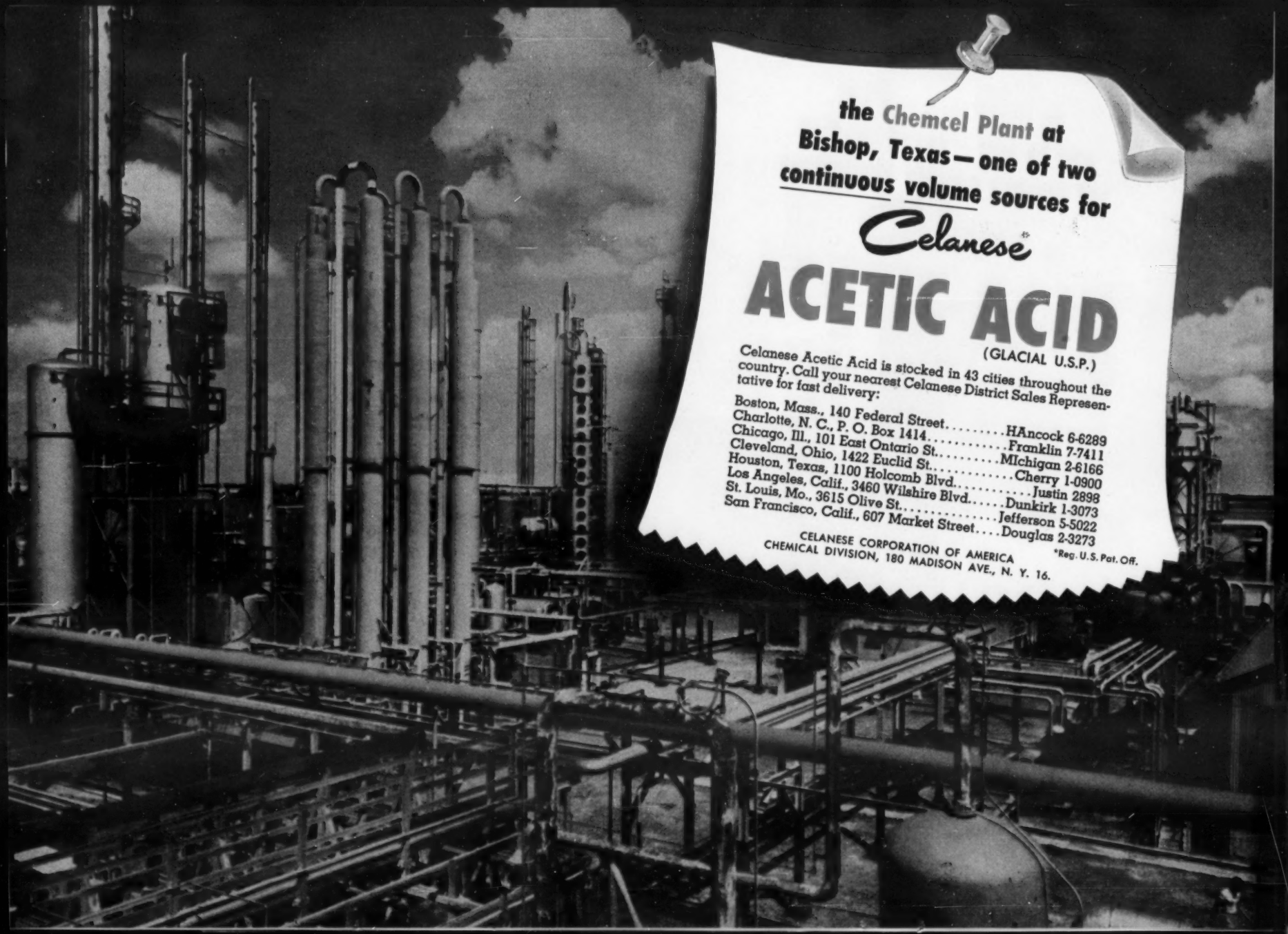
BUILT BY HUNTER ...IT'S DEPENDABLE

JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS, MASS.

NORTH ADAMS, MASSACHUSETTS FOUNDED 1847

plus production

- efficient operation of modern equipment
- less down time of equipment
- quick, easy repair ... rapid parts delivery


the Chemcel Plant at
Bishop, Texas—one of two
continuous volume sources for
Celanese*
ACETIC ACID
(GLACIAL U.S.P.)
Celanese Acetic Acid is stocked in 43 cities throughout the country. Call your nearest Celanese District Sales Representative for fast delivery:
Boston, Mass., 140 Federal Street.....HAncock 6-6289
Charlotte, N. C., P. O. Box 1414.....Franklin 7-7411
Chicago, Ill., 101 East Ontario St.....MIchigan 2-6166
Cleveland, Ohio, 1422 Euclid St.....Cherry 1-0900
Houston, Texas, 1100 Holcomb Blvd.....Justin 2898
Los Angeles, Calif., 3460 Wilshire Blvd.....Dunkirk 1-3073
St. Louis, Mo., 3615 Olive St.....Jefferson 5-5022
San Francisco, Calif., 607 Market Street....Douglas 2-3273
CELANESE CORPORATION OF AMERICA
CHEMICAL DIVISION, 180 MADISON AVE., N. Y. 16.
*Reg. U.S. Pat. Off.

There's no substitute
for proven performance—

INSIST ON

SKF-Equipped Spindles

When you specify SKF Roller Bearing Spindles — and refuse substitutes — you get the best that money can buy.

More than 40 million SKF-equipped spindles have been put into service during the 30 years that have elapsed since SKF introduced the first anti-friction spindle bearing in 1926. The vast majority are still on the job today.

In recent months, our bolster manufacturing capacity has been increased substantially to better meet your requirements. And as always, SKF works closely with spindle manufacturers in servicing spindles after installation.

Yes, you get full value for your dollar when you

Specify — And Insist On —
SKF Roller Bearing Spindles

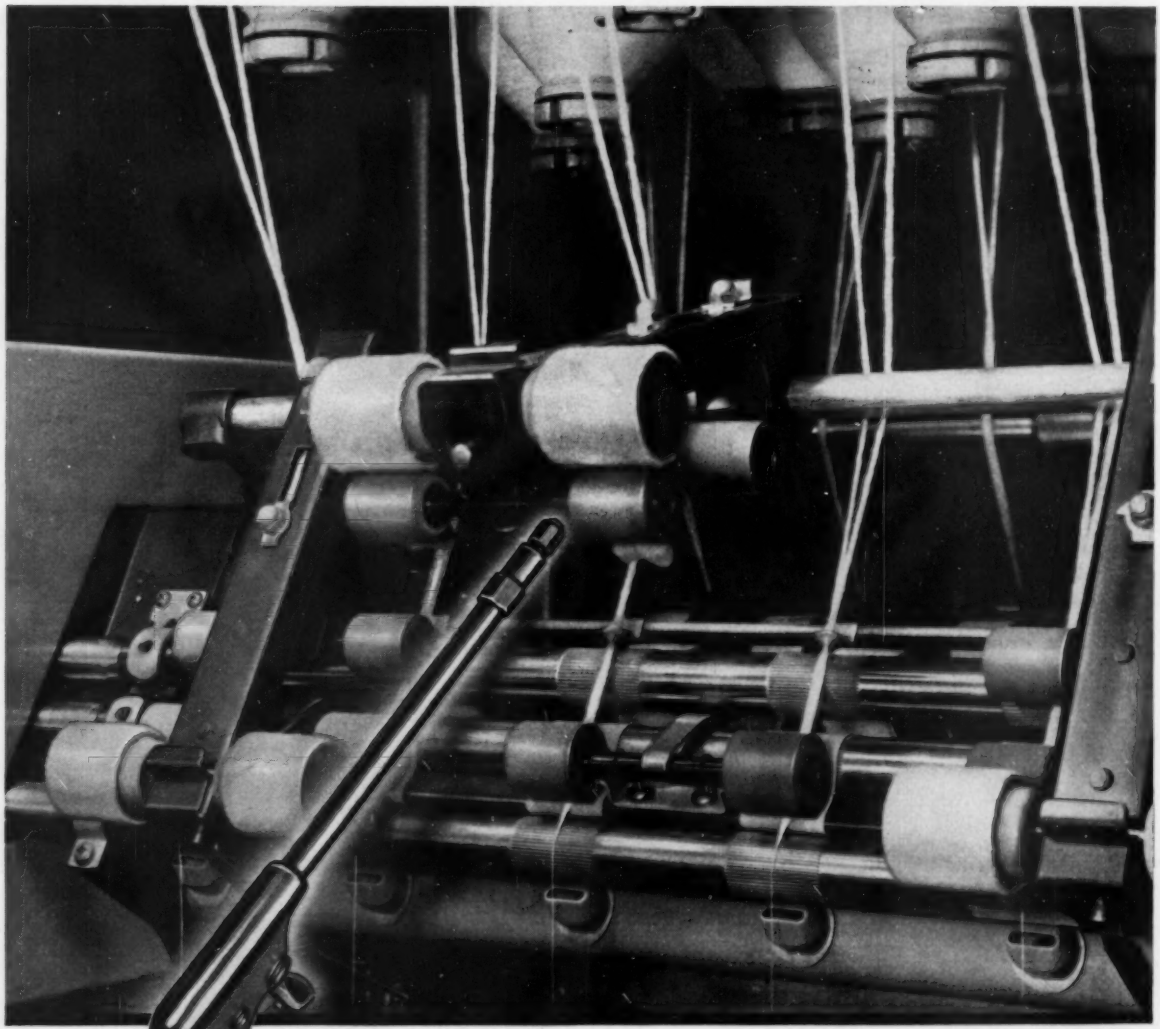
7715

SKF®

TEXTILE BEARING SPECIALTIES

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.
—manufacturers of SKF and HESS-BRIGHT® bearings.

SUBSIDIARY
TYSON BEARING CORPORATION, MASSILLON, OHIO
—manufacturers of "Tyson" tapered roller bearings.



END DRIP SPOILAGE!

Protect your yarn and roll coverings from needless spoilage... switch to Sinclair NO-DRIP lubrication! These outstanding lubricants give complete bearing protection, yet stay put. They won't creep or throw out of bearings—remain fluid—permit rolls to turn easily and smoothly.

Sinclair NO-DRIP Numbers 8, 12, 15 and 17 can save you money through smooth operation and low maintenance costs. Call your Sinclair Representative today, or write for the new NO-DRIP pamphlet to Sinclair Refining Company, Technical Service Division, 600 Fifth Avenue, New York 20, N. Y. *There's no obligation.*

SINCLAIR

NO-DRIP TEXTILE LUBRICANTS

For more information, write direct or use Reader-Service post card.

Etruscan BROWN

One of the colors shown in the SPRING 1957 Franklin Process COLOR NEWSLETTER The Franklin Process Color Newsletter for Spring 1957 is just off the press. Keep up to date in color trends. Send for your copy NOW.

Franklin Process

YARN MERCHANTS & LARGEST PACKAGE DYERS IN THE WORLD
DYEING EXCLUSIVELY ON FRANKLIN SPRINGS

Providence • Philadelphia • Greenville • Chattanooga
Fingerville, S. C.
New York Representatives — 40 Worth Street

Nearly every competitive advantage starts with the machine

"It's the most..."

Tots, toddlers, teen-agers, or totterers — everyone wants top quality in knit-wear. So, for that extra quality that means more sales, equip your machines with precision-built Arrow Latch Needles, Flat Stock and Leaded Assemblies. Arrow Latch Needles assure you of these four essentials: (1) free latch movement; (2) a strong latch; (3) a mirror-smooth finish; and (4) the backing of Textile's half-century of service to the industry. Prompt delivery from stocks in Reading, Pa., Asheboro, N. C., and Manchester, N. H.

Arrow LATCH NEEDLES

Wire Products Division
TEXTILE MACHINE WORKS · READING · PENNA.
In the South: Asheboro, N.C. In the North: Manchester, N.H.
Builders of Textile Machinery Since 1900

The LONG-RANGE VIEW

Tariffs a Subsidy?

Another effort to discredit the textile industry is afoot.

The word "subsidy" is generally considered an ugly word in the United States. It smacks of favoritism, of charity, of inefficiency coupled with political pull. Therefore we condemn most strongly the current effort of the "I-love-the-whole-world" boys to label tariffs and import quotas as subsidies. The intent, of course, is to smirch and discredit, to label all who disagree with their free-trade policies as immoral little beggars sucking their life's blood from the U. S. government and taxpayers.

What's Happening

We first heard this latest little piece of foot-work from a non-textile friend of ours from a textile state in the North. We tried to forget the implications, since the thought was dropped in a friendly conversation. But the other day we ran across the same thought in a newspaper editorial right here in Greenville, S. C.

We have no idea who hands out the party-line chatter for the "I-love-the-whole-world" boys, but it is suggestive that we heard this one first out of Philadelphia and second out of Greenville. Whoever tells the others what to say and wherever it starts, here is indication that the accepted party line spreads southward.

It is significant that the line has switched from "Save Japan from the Communists" to "Label tariffs as subsidies." The threat of war in the Pacific has diminished, and Japan lost a lot of support in the U. S. by her unbridled sweep to capture the U. S. textile market and her picayune appeals to the State Dept. to make U. S. textile men stop saying naughty things about Japan. So the "Save Japan from the Communists" line has lost its sting. Hence the switch.

What Is a Subsidy?

One of the best ways to combat the new party line of the free traders is to understand exactly how they are bandying words about. The Western World lost the words "peace," "liberty," "democracy," and a few others to the distorted definitions of Russian use. The same thing could happen to the terms "tariffs" and "import quotas" if enough gullible people swallow the new line of the free traders.

Webster's is a pretty fair arbiter of definitions of words. It says a subsidy is: "Any gift made by way of financial aid," or "A government grant to assist a private enterprise deemed advantageous to the public." That seems clear enough. It means simply a gift from the government to a private party.

So far as we have ever heard, the U. S. government is not giving gifts or financial aid to the textile industry. Our understanding has always been that the government collects tariffs and keeps the money. We've never heard of the government turning the import duties it collected over to the industry concerned.

Subsidy by Taxpayers?

Our friend made the point that tariffs and import quotas amount to a subsidy from the people who consume textiles. The consumer is barred from low-priced foreign goods and has to pay higher prices for U. S. textiles; therefore consumers subsidize the U. S. textile industry.

Well, now. If forced high prices constitute subsidy, the prim, pure free-enterprisers had better take a look around. If that is a subsidy, tax on steel or gasoline or anything else is a subsidy; it forces consumers to pay more. If that is a subsidy, the wage-and-hours law is a subsidy; it forces consumers to pay more. If that is a subsidy, the fast tax write-off many industries have taken advantage of to build new plants and install equipment is a subsidy; it reduced the government's income for a few years and the shortage is now being covered by other taxpayers; so it forced high prices.

The Truth of the Matter

We can now see this latest switch of the "I-love-the-whole-bleeding-world" boys for what it really is: sheer propaganda.

As usual, the propaganda makes an effort to brand the textile industry, the staunchest supporter of market protection. When the party line was "Save Japan from the Communists," the propaganda quoters were hinting that those who disagreed with them were almost traitors willing to sacrifice peace and the U. S. for their own selfish ends. The intent of the "subsidy" stench now is to brand disagreers as betrayers of competition and free enterprise.

So propaganda goes its normal way, with irresponsible half-truths, shady intimations, and intentional warping of innocent words to serve secret purposes, all mouthed in a sanctimonious, highly respectable manner.

We hope that no textile man will be fooled by it.

O. M. Thomas

FINISHING

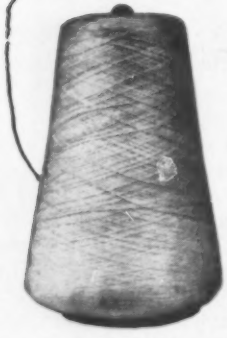
is more profitable with Turbo Stapler Sliver

Fibers keep their parallelism and uniformity when processed on a Stapler. Because of its smoothness, evenness and random staple length, Stapler sliver spins into superior yarns with far fewer pre-roving operations than normally required.

The Staple pattern shows natural variation, fibers are *broken* in *random* lengths, not cut. Fiber ends are soft and imbrication is thorough. There are *no* co-terminal fibers, no fiber clumps, overlapping is as regular as shingles on a roof.

With the Turbo Stapler's easily adjusted heat/stretch-zone, break-zone and crimp-zone, sliver can be given the best spinning properties for that particular fiber, its denier, the desired staple length, and the specific system of spinning.

The most profitable processing of modern fibers demands a modern system. The Turbo Stapler has a mill-proved record of economy, efficiency and flexibility . . . get *all* the facts from a Turbo engineer.



TURBO
SINCE 1929

TURBO MACHINE COMPANY
LANSDALE, PA.

Makers of precision Heat and Steam Setting Machines, Crimpers and Tow Processing Equipment

STRETCHING + BREAKING + CRIMPING + FINISHING = The TURBO STAPLER

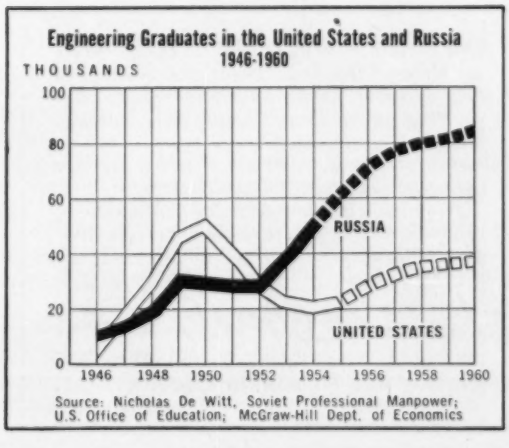
For more information, write direct or use Reader-Service post card.

THE SHORTAGE OF SCIENTISTS AND ENGINEERS:

Are We Losing the Race with Russia?

THERE is new confidence in the Kremlin. One key reason is expressed in a recent boast of Communist Party Secretary Khrushchev: **"The capitalists always regard our people as being backward, but today we have more engineers and more supporting engineering technical personnel than any capitalist country."** He promised that this lead would be widened and that communism would be victorious without war.

This boast cannot be dismissed as communist propaganda. Admiral Lewis L. Strauss, chairman of the U. S. Atomic Energy Commission, has warned: **"In five years our lead in the training of scientists and engineers may be wiped out, and in ten years we could be hopelessly outstripped. Unless immediate steps are taken to correct it, a situation, already dangerous, within less than a decade could become disastrous."**



This second editorial in a series on the shortage of scientists and engineers is designed to explore as carefully as possible the facts and the implications of the new emphasis on technical training in the Soviet Union. It draws heavily from the authoritative book *Soviet Professional Manpower*, prepared for the National Academy of Sciences and the National Research Council by Nicholas DeWitt of the Russian Research Center of Harvard and released recently by the National Science Foundation.

Trend Is Against Us

If the Soviet Union already has a lead in technical manpower, it is not very great. Both the United States and Russia now have around a million scientists and engineers. About a third of the Russian engineers were trained on inferior pre-1935 standards. **It's the trend — shown in the chart — that is alarming.**

Over the last five years we have turned out only 142,000 engineers, compared to an estimated 216,000 in Russia. In 1955 our output was around 23,000 compared to their 63,000. Over the next five years our projected output is 153,000, against at least 400,000 in Russia. There will be an additional 150,000 or more in the satellites and Red China.

In Russia, 30% of the college students are in engineering, compared to 8% here. Another 30% or more take degrees in natural sciences. Moreover, unlike ourselves, the Russians are

ploughing back a large proportion of their science graduates into teaching, which implies a rapid buildup in the future.

Quality As Well As Quantity

It would be foolhardy to assume that these new Russian graduates are inferior to ours in the quality of their technical training. They start out with much more intensive mathematical and scientific preparation at the high school level. They study harder and longer in college, with more laboratory work and more practical training. Their courses and textbooks seem to be as thorough as ours. Even though the Russian graduates may be overspecialized, they get results.

These results have been striking. The Russians developed both A-bombs and H-bombs faster than we expected, and it's not certain that they had to rely much on espionage. They pushed ahead of us for a while in jet fighter design, and they showed up with a fleet of long-range bombers well ahead of schedule. They are crowding us on nuclear power, electronics and automation. There are grave fears that they have established a lead in the vital field of military rockets.

The goal of Soviet scientific manpower policy includes not only weapon supremacy but also leadership of the neutral and uncommitted areas of Asia, Africa and the Middle East. The Soviet leaders may be bluffing in their offers to export capital, but they are preparing to export Russian scientific and technical know-how in a big way.

How They Do It

The Russians are determined to win the race for scientific supremacy, and they do not count the cost. **They pay their scientists and engineers salaries that seem fantastic when compared with other Soviet incomes.**

Senior professors, research scientists and top engineers are a major segment of the Russian elite. Their incomes are frequently six to ten times the average industrial wage. (In the U. S. six to ten times the average industrial wage would be $25,000 to $40,000 a year.) Housing and other privileges are correspondingly lavish. While preaching equality, the Soviets use capitalistic incentives far more boldly than we do. Indeed, practicing engineers and scientists have been complaining about the exalted status of professors and top research people, and salary scales are now being adjusted to give greater emphasis to practical results.

The Russians are also generous in their aids to education. Tuition has just been made free at all levels. Undergraduates receive 200 to 500 rubles a month and graduate students 800 rubles (about equal to an industrial wage) to cover living expenses. The biggest stipends go to science and engineering students. College students are deferred from military service, and engineers and scientists often enjoy continued deferment even after graduation.

Finally, the Soviet leaders can channel engineers and scientists — and all other human and material resources — into any area they choose. And the areas the Soviet leaders choose are predominantly those that contribute to military or political objectives, rather than to a better life for consumers.

What's Our Answer?

We are certainly not going to adopt Soviet methods. We do not want scientific robots, but free men, able to understand and add to our democratic heritage. At the same time, our world leadership in technology — and perhaps even our survival as a nation — will be threatened if we allow ourselves to lag far behind Russia in the training of scientists and engineers. Ways to keep the United States in the race will be discussed in a later editorial in this series.

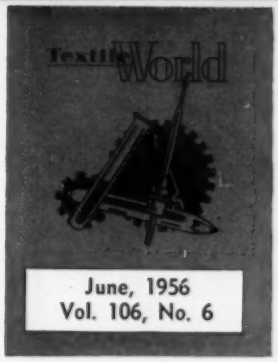
This is one of a series of editorials prepared by the McGraw-Hill Department of Economics to help increase public knowledge and understanding of important nationwide developments of particular concern to the business and professional community served by our industrial and technical publications.

Permission is freely extended to newspapers, groups or individuals to quote or reprint all or parts of the text.

Donald C. McGraw

PRESIDENT

McGRAW-HILL PUBLISHING COMPANY, INC.



What Supervisors Should Know About LABOR COST CONTROL

• Actual control of labor costs must be done by the supervisor. But management frequently supplies a cost-control department to help him set up work standards against which he can measure performance. Best results are obtained when the standards are set on a sound basis and when there is close coordination between the cost-control staff and supervisors.

• To help the supervisor do a better job of labor cost control, we present here the basic requirements of a good labor-cost-control system as outlined—

By JOHN HENDERSON, President, Henderson, Lindsay & Michaels, Inc.

TEXTILE WORLD: Mr. Henderson, what would you say are the basic requirements of a sound system for controlling labor cost?

HENDERSON: I believe that the main requirements can be summarized under six headings:

1. The work standards should be based on sound work-measurement procedures.
2. The work standards should form the basis for incentive plans wherever practicable.
3. The supervisors should understand and be sold on the fairness of both the work-measurement and the incentive system.
4. Actual performance should be measured against the standards at regular intervals in the form of a variance report.
5. Adequate provision should be made for checking to see that the methods and conditions on which the standards are based are being maintained.
6. The installation of job changes should be accompanied by an organized program for gaining the cooperation of the employees on the job to the fullest possible extent.

Measure Work?

TEXTILE WORLD: Let's discuss this question of measuring work. How acceptable is this business of watching a worker on the job and recording his work time?

HENDERSON: As you are probably well aware, there are several schools of thought on the subject. Where work measurement is being done accurately and the results are applied by enlightened management who gives adequate consideration to the human problems of changing job methods and jobloads, the technique is accepted by both sides as a logical approach to determining a fair day's work.

On the other hand, there are still many people who recoil from the thought of measuring work. They look upon it as a process that reflects on the integrity of the person whose work is being measured and as degrading the character of the one who does the measuring.

Strangely enough, these same people accept measurement—even insist on it—in other fields. They buy their milk in quart bottles, their gasoline by the gallon, and their meat by the pound.

Measurement in these fields and many others has been accepted by buyer and seller alike because it is a common ground on which they can agree concerning the quantity of goods involved in a transaction, leaving quality and price as the two remaining areas for bargaining. It is clear to any thinking person that the arguments for measurement that apply in other fields are equally valid when applied to measuring work.

Best Work Measurement

TEXTILE WORLD: Recognizing that work measurement is desirable and necessary, how can it be done accurately and to produce the lowest cost?

HENDERSON: Well, there are several requirements

for obtaining an accurate, low-cost work standard. Some of them are:

1. The best possible work methods for the job should be determined and set up as standard procedure.
2. The best practicable operating conditions should be selected and set up as standards.
3. The job should be based on a reasonable work pace.
4. The work standard should contain adequate provision for normal variation in the standard conditions from hour to hour.
5. It should contain adequate provision for rest time.

TEXTILE WORLD: These points raise a whole series of questions. How do you select the best methods and conditions? What is a reasonable work pace? What are normal variations from standard conditions?

HENDERSON: Suppose we take them one by one, beginning with selecting the best possible work method.

TEXTILE WORLD: Is there such a thing as a best work method?

HENDERSON: No. Perfection in work methods results in completely eliminating the job. If you recognize this simple truth, you see what vast opportunities there are for cost savings through methods improvement.

There are at least three ways of finding better work methods:

1. Analyzing the job by using work-simplification techniques
2. Studying different methods used by the people on the job
3. Motion analysis based on one of the predetermined time systems

TEXTILE WORLD: By predetermined time systems you mean systems like BMT (Basic Motion Timestudy) and MTM (Method Time Measurement)?

HENDERSON: Yes.

To Analyze Work Methods

Work Simplification

HENDERSON: Well, to discuss the first technique—work simplification—I'm sure you're familiar with Allan Mogenson's work-simplification program. It is an organized approach to finding better work methods.

Mogenson divides all manual work into three categories: material handling, machine work, and hand work. For each type of work, he has a special system of analysis. Basically, the systems consist of breaking the job down into small elements and systematically questioning each element with: What? Why? When? Where? Who? How?

Methods of Different Operators

This method—analyzing work methods used by different operators—involves making detailed timestudy of a representative group of operators. Different employees take varying lengths of time to perform the same job. Some of these differences in time are due to differences in work pace; others are due to different work methods. A qualified timestudy observer notes these differences and the reasons for them as the study is being made.

As a further check, the timestudy man uses a simple statistical-analysis technique to locate differences in methods used by the same operator. He prepares frequency distributions or histograms of all the work times recorded for the same work element. The pattern of these distributions will indicate whether there were any distinct differences in the work methods or conditions that were not detected by him during the study.

Predetermined Time Systems

The third method—the use of predetermined time systems—is a very productive source of methods improvement. The procedure requires breaking the job down into basic body motions. This extra detail leads to still closer examination of the methods used. As a rule, it necessitates developing an extensive training program because it brings to light more changes in methods than the other two techniques.

Operating Conditions

TEXTILE WORLD: What about the second requirement—selecting the best conditions on which a standard will be based?

HENDERSON: First of all, we should define operating conditions. They include such things as machine speeds and settings, frequency of end breakage, amount of material on creel and doff packages, cleaning schedules, etc.

Not too many years ago it was common practice to base all work standards on the actual average of a number of so-called representative samples of package weights or end-break checks. There were two basic errors in this approach. In the first place, in many instances, the sampling technique was not statistically valid. And second, no attempt was made to evaluate the effect of variations from the average.

TEXTILE WORLD: Could you cite a specific case where such an error would produce an error in jobload?

HENDERSON: Well, consider a battery-filling job on very heavy yarns. Suppose the average quill weight is 0.12 lbs., with the range varying from a low of 0.08 lbs. to a high of 0.16 lbs. Also assume that on the basis of a 0.12-lb. quill, each time the batteryhand visits a loom nine quills have run out and that she visits the loom every 30 mins. Again, assume that the quills are plugged from a conventional batteryhand cart.

Now, consider what happens when she encounters several hundred quills on the light side of the range (0.08 lbs. per quill). Nine of these quills would run out in 20 mins. This run-out would mean that the batteryhand would have to plug about 12 quills in the first loom visited. That would delay her progress through the set because each loom with short quills would take 30% more than the normal tending time.

Thus, she would get further and further behind until she would find it necessary to turn the batteries back to fill them. That necessity in turn would add to her work and put her still further behind. So it is apparent that any sizable quantity of quills on the low side of the weight range on such a job assignment would create a temporary overload for the batteryhand and make the job impractical.

TEXTILE WORLD: Then you think it would be leaving too much to chance to set up a workload under those conditions without either reducing the range of variation in quill weight or taking the precaution of seeing that undersize quills were well mixed with those that are oversize?

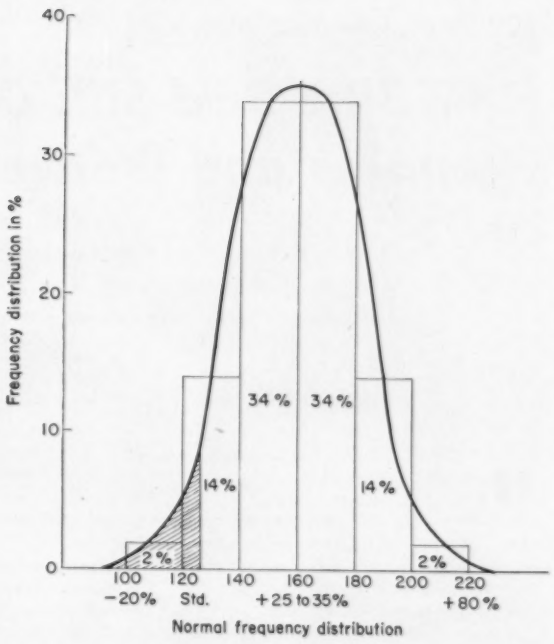
HENDERSON: Yes. Today no industry can afford to do unnecessary gambling on matters that affect labor relations.

How Workers Vary in Pace

The working pace of employees varies over a range that fits the Gaussian curve of normal frequency. The range of variation from the slowest worker to the fastest is 1 to 2¼ (100 to 220 on the base line of the chart). This variation means that the slowest worker will produce one unit of production while the fastest worker produces 2¼ units.

Also, 68% of all workers are in the range of 1.4 to 1.8 units (140 to 180 on the chart). In actual practice, a much larger percent of workers are in this range, since the very slow workers are weeded out by the supervisor and the very fast workers gravitate to more rewarding work.

Therefore, the timestudy man using the effort-rating technique discussed in the text is seldom required to rate beyond a very limited range.



The Work Pace

TEXTILE WORLD: Well, once you select the standard work methods and work conditions, what problems do you run into in actually setting up the standard job?

HENDERSON: There's only one other factor that can influence the time required to perform a given job. That factor is the work pace of the operator.

There are four techniques available for dealing with this problem of work pace:

1. Averaging the work times of a number of operators
2. Leveling
3. Effort rating
4. Predetermined times for standard body motions

TEXTILE WORLD: Which of these four techniques is best?

Averaging

HENDERSON: Well, the first—averaging—is generally considered obsolete by those who have given serious thought to the problem. There are two objections to this technique.

First, on most manufacturing jobs it is virtually impossible to find enough people performing the work under the same methods and conditions to provide a statistically valid result.

Second, the time required to obtain such data makes the cost prohibitive.

Leveling

Leveling is a procedure whereby the observer adjusts the work times obtained according to his appraisal of the operator's speed and skill.

Effort Rating

The third technique—effort rating—also depends on the judgment of the observer and therefore cannot be considered a scientific approach to the problem. However, at this stage in the development of work-measurement procedures, in the hands of a trained observer it is probably the most reliable method of adjusting for differences in work pace.

[See the accompanying chart and explanation of the Gaussian curve applied to effort rating.]

Predetermined Time Systems

It may be that in the next decade predetermined time systems will eliminate the problem of adjusting for differences in pace. However, in my opinion, they have not yet been perfected to the point where they are an acceptable substitute for existing techniques except in limited areas of the field of work measurement.

TEXTILE WORLD: Are there any other problems relating to setting sound work standards?

HENDERSON: Yes. No matter how good the work-measurement techniques are, it is possible to arrive at an unsatisfactory standard.

One of the ways that this mistake can happen is through errors in computing jobloads and rates. It is particularly liable to happen on many of the multiple-machine jobs in textiles. For example, one common error is the failure to provide enough spindles on winding to take care of lost time when an end breaks and stands until the operator gets back to tend it.

In many jobs, maximum labor effectiveness can be obtained only at the expense of machine utilization, and vice versa. I would like to make a plea for closer coordination of the work of the supervisor, the industrial engineer, and the cost accountant to achieve the correct balance between labor effectiveness and machine utilization. It is my belief that the textile industry is losing many thousands of dollars annually because this balance is not receiving adequate consideration.

Silk Preparation and Weaving

How Blue Bird Silk Co. Prepares and Weaves SILK

• Because delicate yarns must be handled carefuly, this old-line silk manufacturer keeps machine speeds low on some yarn processes. But newer and higher-speed machines are being fitted into the production line.

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

Blue Bird Silk Mfg. Co., Inc., York, Pa., is best known for its silk fabrics. But consolidating its two plants at York and adding new equipment has made the mill a natural for weaving specialty fabrics in addition to its basic money-earner, silk.

There is a total of 230 looms at Blue Bird, and approximately 200 styles of fabric are being woven at present. An average of 4,000 styles are woven each year, and each style is usually woven in several color combinations.

The bulk of Blue Bird's production is on 100% silk; but cotton, wool, and practically all of the synthetic fibers are woven in specialty fabrics. Other fibers include metallic, filament-rayon, dope-dyed, spun-rayon, spun-nylon, Vinyon, several Bemberg yarns, and many others.

The range of yarn is from 20/22 raw silk up to 4,000-den. rayon. Other common yarns used are 150-den. rayon and 75-den. Bemberg.

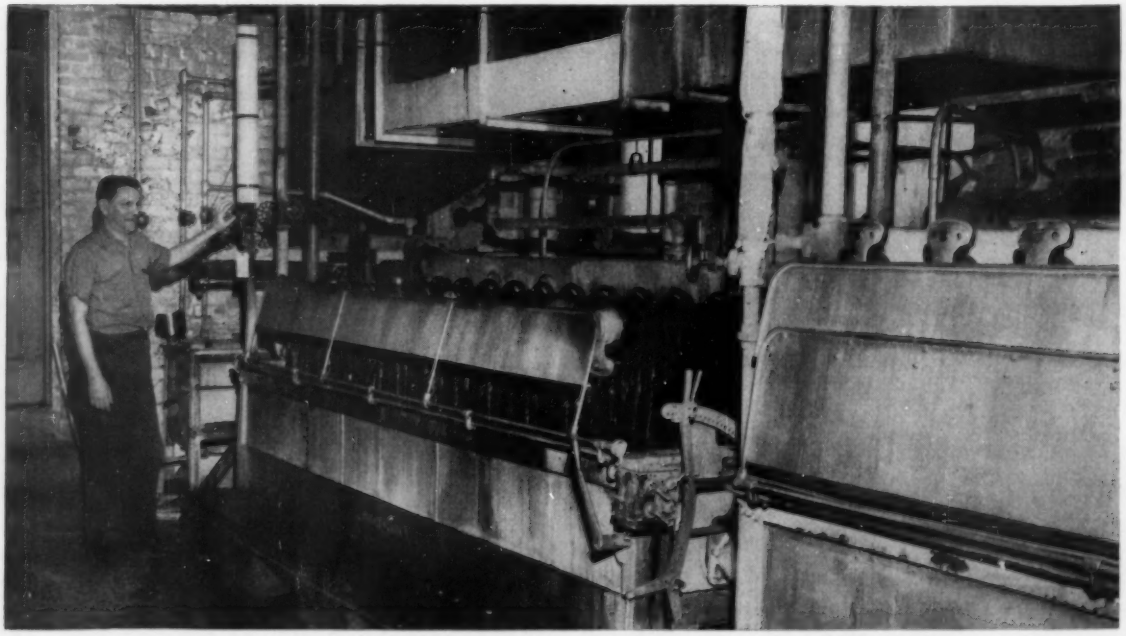
Fabrics woven range from 10 ends per inch in the warp and 10 ppi. up to 700 ends per inch and 150 ppi. For example, a double-face silk satin has 650 ends per inch.

Silk Is the Breadwinner

The largest production is silk tie fabrics and women's dress goods. Cloths woven from 150-den. rayon are third in importance. Many of the newer fabrics in women's dress goods are woven with silk warps and cotton filling. Luxury items such as linings for women's fur coats and men's dress suits are woven from 100% silk.

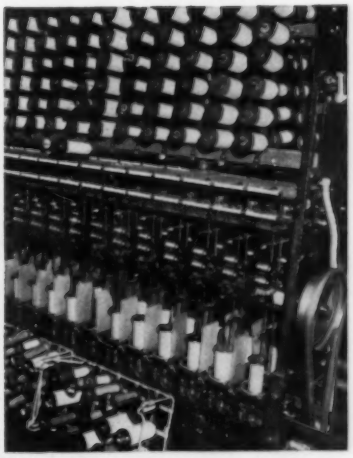
One of the most distinctive fabrics being woven at present is a silk lining for fur coats. The basic weave is a black satin body woven with shaft harnesses. A 2-in. border for the lower section of the coat lining is woven with jacquard harnesses in colored silk yarns with a decorative gold Lurex design only ⅝ in. in size. Five pounds of Lurex are woven in and clipped off for every ounce that is left in the fabric.

How Yarns Are Prepared



YARN DYEING is done in a Smith-Drum machine, which is also used to remove gum from the yarn.

WINDING from skeins to spools is done at low speed on Universal skein winders.



THROWING YARN is the usual process in warp preparation. Low twist of only 3 to 5 tpi. is inserted.

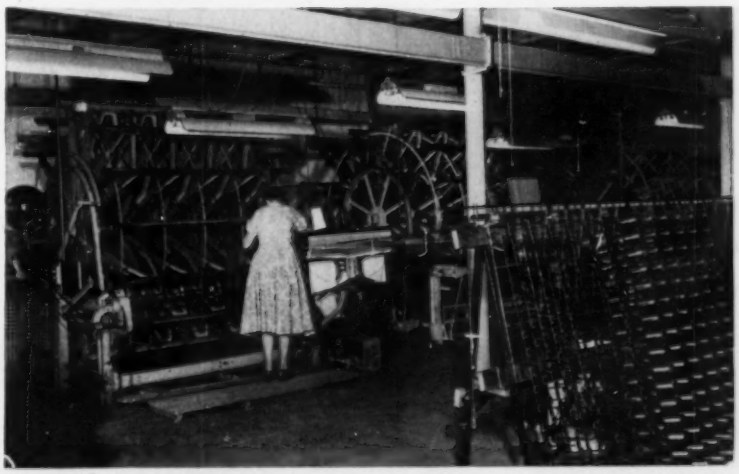
Silk yarn is received in bales weighing 130 to 135 lbs. Each bale contains 28 skeins or books of yarn.

The first process at Blue Bird is soaking the skeins of silk in a vegetable oil containing a mildew preventive. Then the yarn is air-dried. The raw yarn has about 22% gum content, and part of the gum is removed. Most fabrics are woven from souple yarns, from which only a small portion of the gum is removed. In other fabrics where a soft hand is desired, the yarn is degummed.

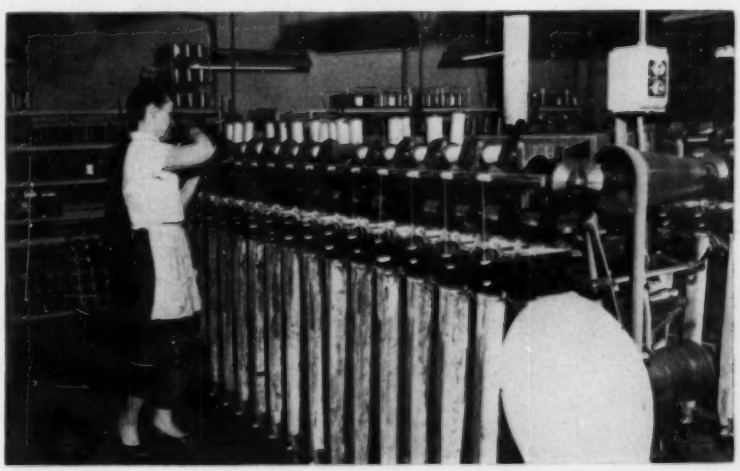
The yarn is dyed on a Smith-Drum Cascade skein-dyeing machine, extracted in a Tolhurst Suprex extractor, and air-dried. Then it is handled to straighten the skein arrangement.

The skeins of yarn are wound on spools on a Universal skein winder for both warp and filling yarns. Many silk yarns are thrown for greater size. The yarns are thrown in from two to six plies on a Universal 5-B machine. From 3 to 5 tpi. are inserted.

Warps are beamed on a Sipp-Eastwood horizontal warper at speeds as low as 100 yds. per min. The number of ends per warp runs as high as 35,000. Silk warps are not slashed.



BEAMING on Sipp-Eastwood horizontal warpers is performed at speeds as low as 100 yds. per min.



FILLING YARN is sized on rep fabrics to make the fabric surface smooth. Yarn is run from spool to spool.

How Filling Is Processed

All filling yarns for rep fabrics are thread-finished. The yarn is rewound from spool to spool and is run through a sizing material and dried between the two spools. The thread-finishing machine has several modifications made by Blue Bird. Most rep fabrics are black in color, and the filling yarn is dyed after it is sized.

Most silk filling yarns are wound on Universal No. 90 horizontal winders. The only difference between filling

FILLING WINDING is usually done on Universal No. 90 horizontal winders, but Whitin-Schweiter winders are also used.

yarns and warp yarns is that warp yarns are usually heavier because they're thrown with more plies.

The speed of the winders is 1,800 to 2,500 rpm.

One group of No. 90 winders is equipped with Kidde tensions. Another group has a pinwheel tension that was developed at Blue Bird.

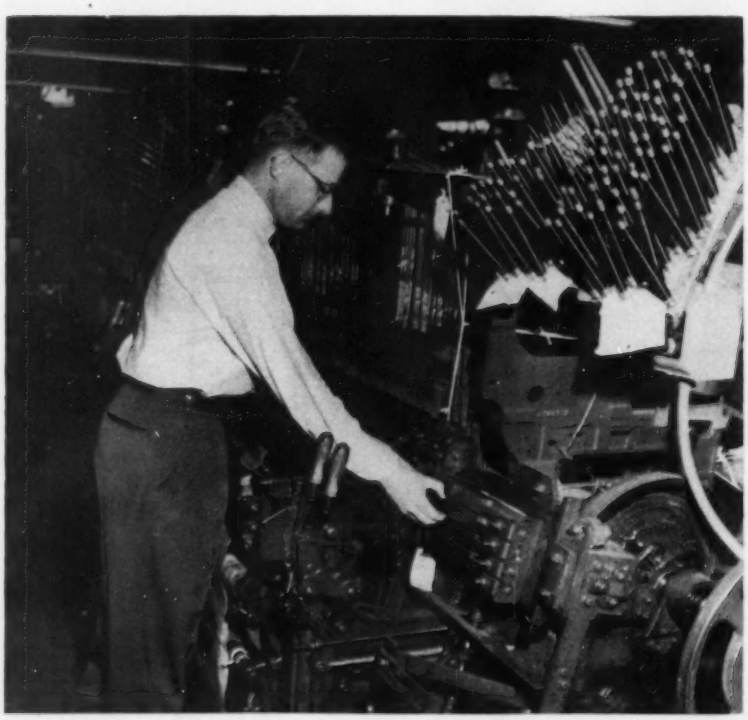
The filling for each loom is run by individual order. Each color and size of filling is identified by a code number, and this number is used for identification throughout the mill. With this system, filling left at the end of a cloth order is cut to a minimum.

Warps for fibers other than silk are slashed for Blue Bird by other mills if they must be slashed. All these warps are slashed on the cotton system.

Whitin-Schweiter winders, running at 4,000 rpm., are used to wind filling on cotton, wool, and all synthetic yarns. But when the Whitin-Schweiter winders are idle on other yarns, they are used to wind silk. These winders are held for coarser yarns because the automatic features pay off. However, all tensile yarns are wound on Universal No. 90 winders.

No knots are tied in the yarn at the winder; when an end breaks, the bobbin is doffed and is placed on the loom as a piece. Therefore many tight picks, broken picks, and knotty yarns are eliminated in the woven cloth.

How Weaving Is Done



PICK-AND-PICK loom is a C&K S-1. Superintendent Marvin Simkins changes a shuttle at a filling run-out.

Almost every loom is running a different filling combination. An example of a filling combination woven on a typical loom is 300-den. bright rayon in light green, rose, and light blue and gold Lurex. This fabric is for women's shoes and handbags.

Blue Bird is gradually replacing its older 4x4 silk looms with Crompton & Knowles S-1 looms, which are 4x4 pick-and-pick looms. The looms are 60 ins. wide, and the loom speed is varied by the fabric being run. The average speed is 15% higher than the older silk looms.

The S-1 looms have 20-harness dobbies equipped with multipliers. They have four electric feelers and, of course, all filling is changed by hand. Center-fork filling stop motions are used.

The race plates are covered with felt. Paterson shuttle eyes with from two to four loops are used, depending on the cloth being woven. A small roll of shuttle fur or sheepskin is also attached inside the shuttle near the eye to apply tension. Fur is used on both sides of the shuttle. Bobbin lengths vary from 6½ to 8 ins., according to cloth styles.

The looms have incandescent lamps located under the cloth just above the loom rocker shafts so that

weavers can see each inch of woven cloth clearly. Temples or cloth-guide rolls are used, depending on the fabric woven.

On heavy fabrics, a two-face satin for example, 12 banks of drop wires are run. On an average fabric of this construction, 10 harnesses plus the selvage harnesses are used.

All women's dress goods and tie fabrics are woven pick-and-pick. The standard width for tie fabrics is 25 ins. Two 25-in. widths are woven on one loom. The cloth is split in the center at the loom breastbeam by a razor blade as it is woven. A doup and a standard heddle at each side of the split cloth hold the cloth intact. A few selvage ends are also woven next to the doup-harness ends.

Other Looms Are Automatic

Crompton & Knowles 2x1 S-6 looms have also been added for a few special fabrics. However, most of the fabrics require pick-and-pick operation.

The S-6 looms run 8-in. bobbins. They are 58 ins. wide and operate at 152 ppm. All the S-6 looms are equipped with two-cylinder jacquards, but the jacquard connections are tied up and dobbies are put on the looms when fabrics can be woven more easily with shaft harnesses. Jacquard cards run from as low as 20 up to 4,000 by cloth styles.

Weavers operate from as few as two looms on pick-and-pick looms to as high as 12 looms on bobbin-changing looms.

Looms are cleaned with a portable vacuum cleaner at warp-outs. The weave room and all other production departments are air conditioned. The weave room atmosphere is kept at 56% r.h. and 78° F.

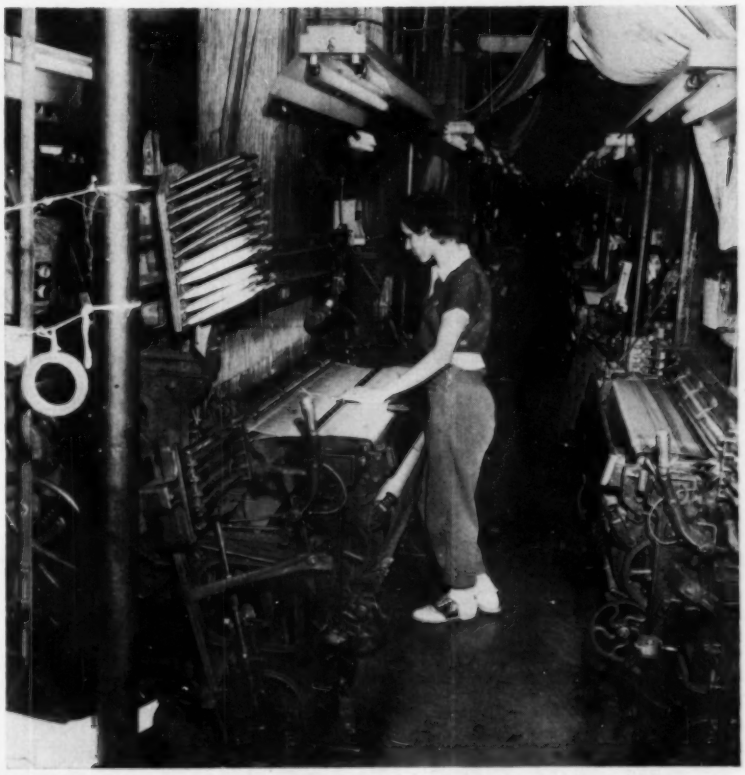
Specialized Cloth Grading

The cloth-grading room is called the picking department. Cloth is inspected and graded as it is run over small inspecting machines. There are so many styles and such a great variety of styles that a point system cannot be set up. But each defect is recorded on a grading ticket. Picking-room employees pick off all loose threads as they grade the cloth.

Most cloth is graded in 50-yd. loom lengths, but some styles of special orders run as low as 8 yds. The cloth is measured with yardage meters as it is picked. Tie fabrics are graded by pickers with long experience and high skill.

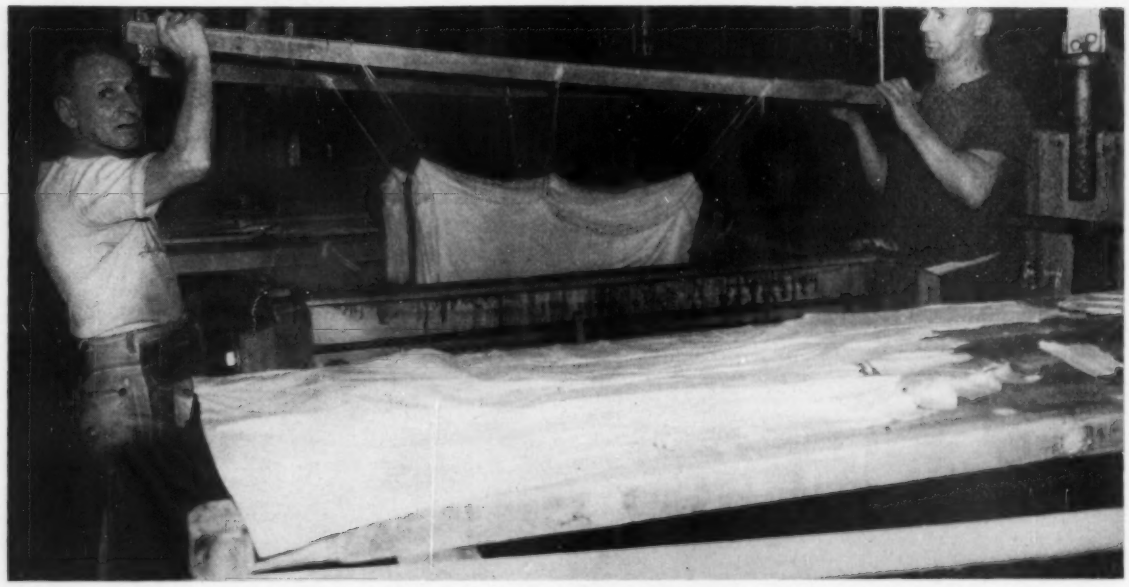
Each roll of picked cloth is shipped in an individual carton.

The weaving department operates three shifts; other departments operate one and two shifts.



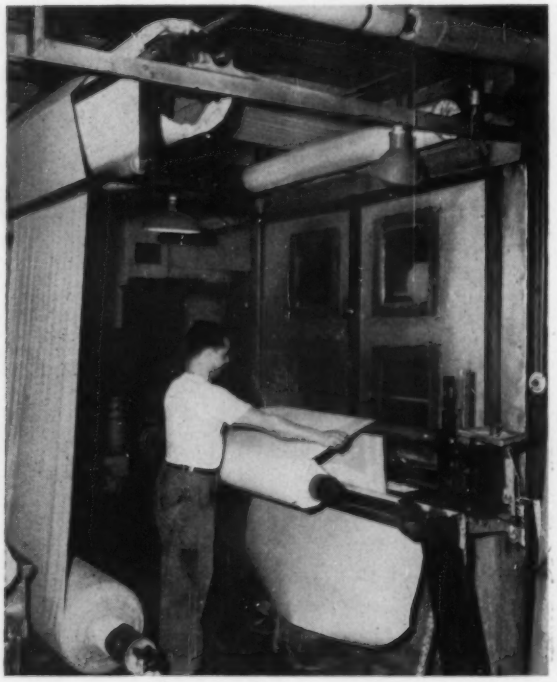
TIE FABRIC is woven double-width on a 4x4 pick-and-pick loom and is cut in the center.

CLOTH PICKING and measuring is the final process for the silk fabric. Tie fabrics are 25 ins. wide.



STRUNG CHIFFON is boiled off for about 2 hrs. in an olive-oil soap solution at 205° F. Each piece is moved periodically to help loosen and remove the natural gum.

How Brooks Piece Dye Works Dyes and Finishes SILK



FOUR-PASS NET DRYER is compact and is operated by one man. This type of dryer exerts little tension on the fabric.

This New York City plant has specialized in dyeing pure-silk fabrics for nearly 25 years. Working mostly with small lots, often one piece to a shade, the mill has succeeded by—

- **Giving each piece individual attention**
- **Meeting the exacting requirements of a fashion-conscious clientele**

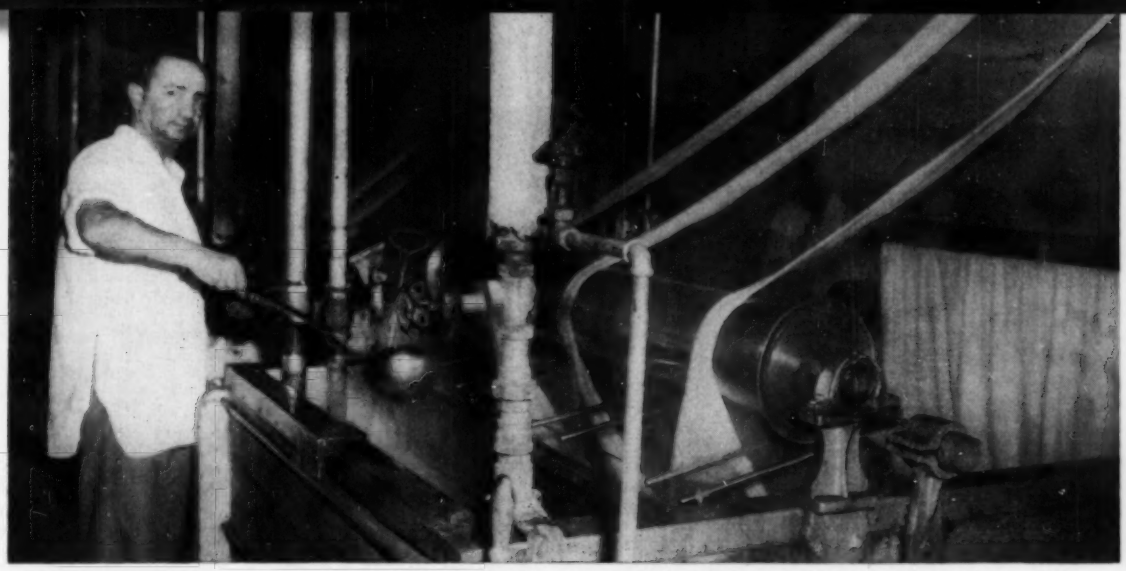
By ROBERT W. PINAULT
Assistant Editor, TEXTILE WORLD

Brooks Piece Dye Works has made a specialty of dyeing and finishing pure-silk fabrics. Its success is due in large part to the individual handling of small lots to meet any shade or finish requirements of a particular customer.

Silk-dyeing methods have actually not changed a great deal in recent years, and mass-production methods are not used in the Brooks operation.

A standard chiffon construction handled at Brooks will count 96x120 and finish at 60 ins. or 45 ins., depending on gray width. The 15-den. yarns will carry about 50 tpi. in a typical construction.

Chiffons are yarded off and hand-strung at three places on one selvage to provide a support for the fabric so it can be hung in the boil-off bath. Heavier goods, such as shantungs going into decorative fabrics, are generally hanked off on a reel and boiled off in this form. These



SILK DYEING requires smooth equipment and speedy color matching to avoid chafing the delicate fabric. Stainless-steel liners and breast rolls cut down chafing danger and are easy to clean.

fabrics, weighing from 25 to 50 lbs. per 100 sq. yds., are apt to show crack marks at the folds if they are yarded off and strung for boiling off.

Silk in the gum received at Brooks is boiled off in a strong solution of olive-oil soap at 205° F. The chiffons, suspended from poles by the strings at the selvage, are moved constantly in the boil-off tub by two operators. The boil-off will take from 1½ to 2 hrs. on the average but is extended if necessary to remove every trace of gum.

A rinse in a fresh bath of water at 205° F. to get rid of the soap and gum residues follows. Water hardness is corrected by adding a polyphosphate compound to the rinse bath. The boil-off is the heart of silk dyeing, and nothing can be done later to completely overcome a skimpy job of gum removal; so Brooks bears down on this operation. The pieces are centrifuged to remove excess water before drying.

Although chiffons are not crepe fabrics, they must be dried at low tensions or they will pull out and become thin. Brooks dries chiffons on a four-pass net-type dryer after the boil-off unless the goods are going directly to the dyebecks as a lot.

Because of the nature of a custom-dyeing business, it is generally necessary to dry the boiled-off goods and hold them for orders that may run from 1 to 5 or 10 pieces. Where more than one piece is involved, there are often as many colors ordered dyed.

Dye With Care

Silk chiffons can be easily chafed if overworked in dyeing; so Brooks sees to it that the stainless-steel becks are kept smooth and that the actual dyeing takes as little time as possible. Acid dyes and neutral-dyeing acid dyes are used principally.

Dyebaths are made up with a small amount of dyeing assistant, and dyeing is started at 120 to 130° F. and the temperature raised to 200 to 205° F. After 30 mins., acetic acid may be added to exhaust the color; and after another 30 mins., a patch is taken to check the shade.

From then on, the goods may be let run or more color or acid added. Because practically every lot is a different shade, formula dyeing as such is out of the picture and shade matching remains a high art.

Brooks keeps a number of the most used dyes made up in concentrated solutions. Known amounts of these solutions are ladled out when a dyeing is started. Experience tells the dyer the approximate amounts necessary to start the shade. The method is suitable to the small lots and unusual number of different shades dyed each day.

After the shade is matched, the bath is cooled down and the goods thoroughly rinsed. They are taken from the beck, hydroextracted gently, opened, and dried.

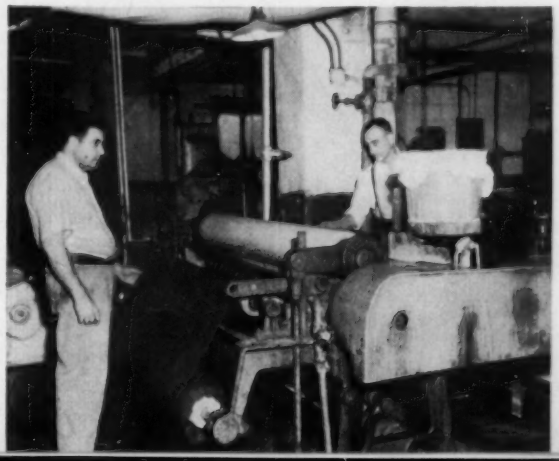
Finishes Are Simple

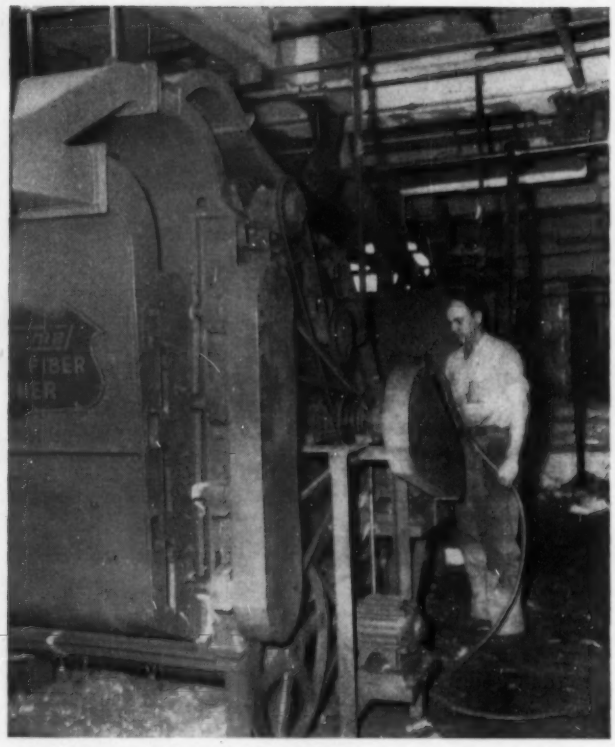
Silk chiffons do not require complicated finishing operations. Brooks pads the dyed goods through a light quetsch with finishes that may consist simply of a sulfonated oil or mixtures of oil with gums or with highly converted starches. No attempt is made to produce a water-resistant finish because the end use for these fabrics is mainly expensive dresses that are carefully dry-cleaned.

Net-drying follows the finish application, and the goods then go to a short open tenter for steaming to width and to smooth out the surface. Finishing of chiffons is generally complete at this point, but occasionally a light calendering is required for built-up finishes. A three-roll calender with manual set is used for this purpose.

Brooks' location in the center of New York City helps materially in speeding up deliveries to local contouriers who make up expensive one-of-a-kind garments for what used to be called the carriage trade.

HERMANN SCHEFFLER, plant manager, (right) checks a silk chiffon being put through a light quetsch to pick up a finishing solution. Most chiffons get a light oil finish or one bodied with gums to match the customer's standard.





EACH OPENING LINE includes a Cen-Tennial fiber opener operating at 1,400 lbs. per hr.

CARDING Modifications Improve Duck Quality at Columbia

Carding stock for duck and canvas requires a lot of know-how. Columbia Mills, Columbia, S. C., improved both quality and production by—

- **Adding opening equipment**
- **Installing perforated card screens**
- **Spreading roving-frame flyers**
- **Testing at every process**

By WILLIAM G. ASHMORE, Associate Editor, TEXTILE WORLD

THE CARDING OPERATION at Columbia Mills, Columbia, S. C., is different from carding in the ordinary cotton mill spinning medium or fine numbers. Extra opening and picking equipment is used, laps are bigger, there is no drawing, oversize roving packages are produced on modified frames, and the stock is tested at every process.

Cotton is bought on guaranteed Micronaire readings, and spot checks are made with the Micronaire on cotton received. The Micronaire also is used daily to check fiber blending at the picker.

The opening room has three lines of equipment with two sections each. The first section consists of five No. 5 Saco-Lowell hoppers, a feed table, a Cen-Tennial fiber opener, a Cen-Tennial separator, a No. 1 condenser, and a reverse feed table. The second section has two Saco-Lowell F5 blend-

ing hoppers, a vertical opener, and a No. 11-over-12 cleaner.

Each line of opening equipment feeds to a section of four Saco-Lowell single-process pickers equipped with blending reserves. The 12 pickers have two-blade back beaters running 900 rpm. and a three-blade Kirschner beater running 800 rpm.

Varimeter Used at Picker

Production of 16.50-oz. laps weighing 90 lbs. net is 350 lbs. per hr. per picker.

Laps are tested regularly with a Uster Varimeter; if variation is above the maximum tolerance, the picker is checked by the fixer; and, if necessary, the machine is shut down until the trouble is located and corrected.

Routine variation tests are made weekly by the laboratory, and Micronaire tests are made daily.

In the card room, there are 216 Saco-Lowell cards producing a 56-grain sliver at 13.5 lbs. per hr. The cards are equipped with a spring on the calender rolls that enables the rolls to condense the sliver so that 17 lbs. can be put in a 12-in. can. The mill is testing 18x42 cans.

The cards are equipped with perforated screens that substantially reduce waste. Continuous strippers are used. Cylinder speed is 175 rpm.; lickerin speed is 462 rpm.; settings are standard.

A Uster tester is used to check sliver evenness at the cards. Sliver weights are watched carefully, neps are counted, and flat strips are weighed regularly.

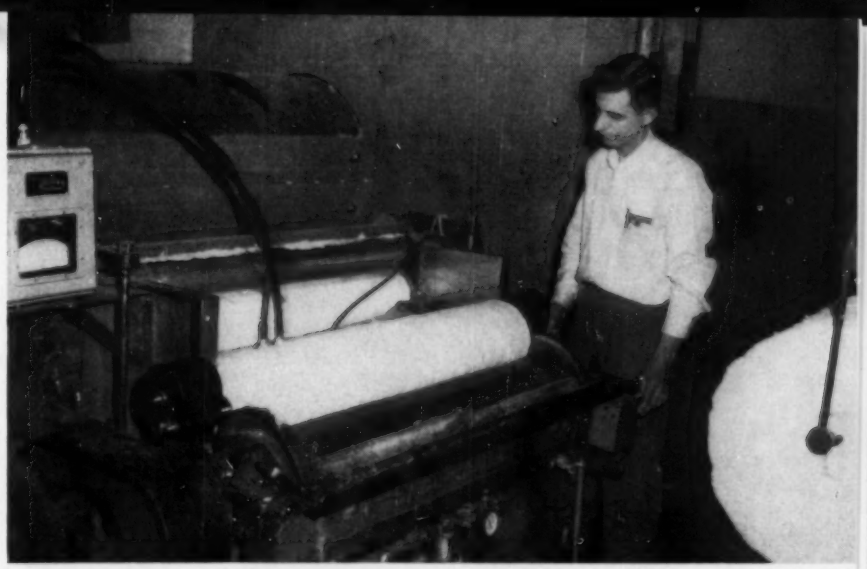
Card sliver is put directly on the 60-spindle Saco-Lowell roving frames, which have been modified to produce a 12x7 package. Gauge is 10¼ ins., fliers have been spread, and the cone belt is run the full length of the cones to keep the frame from knocking off before the bobbins are full. These modifications permitted the mill to increase its 0.60-hk. roving packages from 46 oz. to 58.5 oz.

Roving Tested Daily

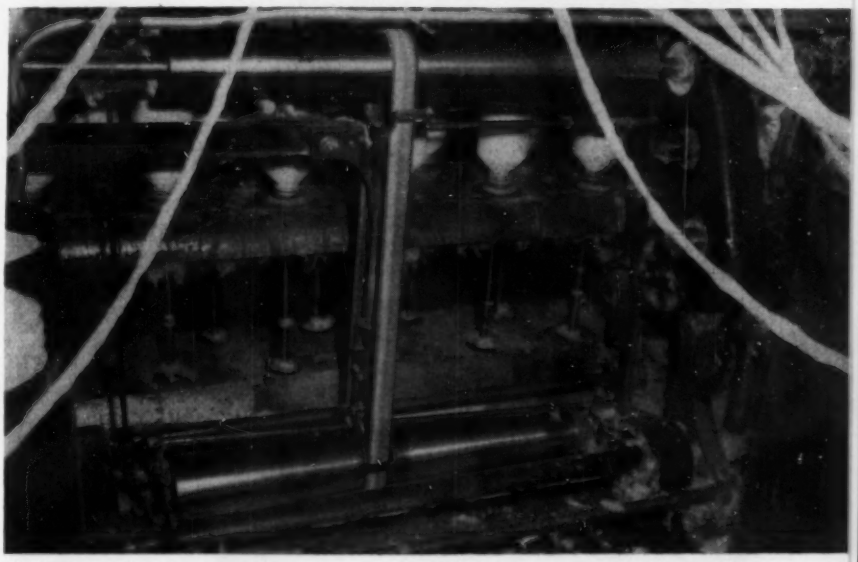
The roving frames have conventional three-roll drawing. Total draft is 4, back draft 1.14, and front-roll speed 205 rpm. Pneumastop and Adams stop motions have been added.

Roving is tested daily with a Uster evenness tester, and regular sizings are made. Each operator runs four frames.

In a duck mill, cleaning is a never-ending problem because of the coarse numbers run. Columbia's cleaning schedule for roving frames follows: Blow out guides twice per shift, clean backs once a week, pick spindles once a day, clean rolls once a week, and pick clearers twice a day.

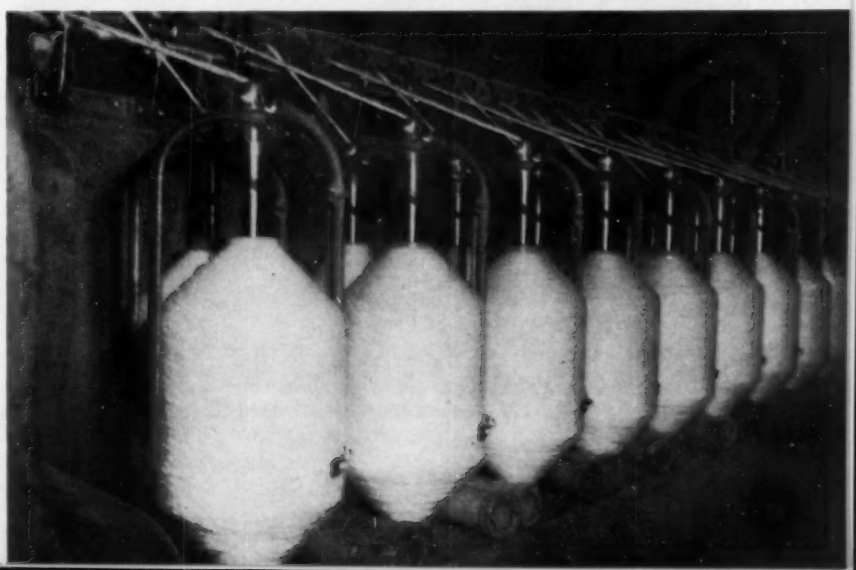


PICKER-LAP VARIATION, checked constantly, is not permitted to exceed maximum limits.



ROVING FRAMES are adjusted so they will not knock off before the belt reaches the extreme end of the cones.

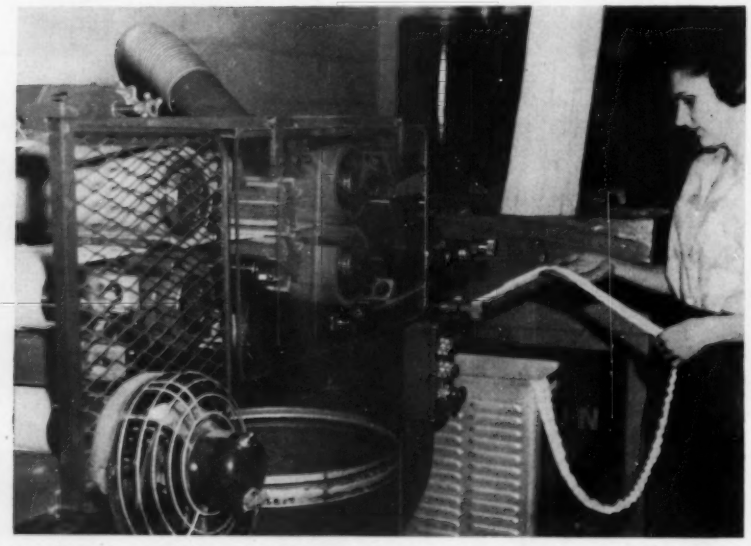
FLYERS are spread to permit the production of a 12x7 roving bobbin.



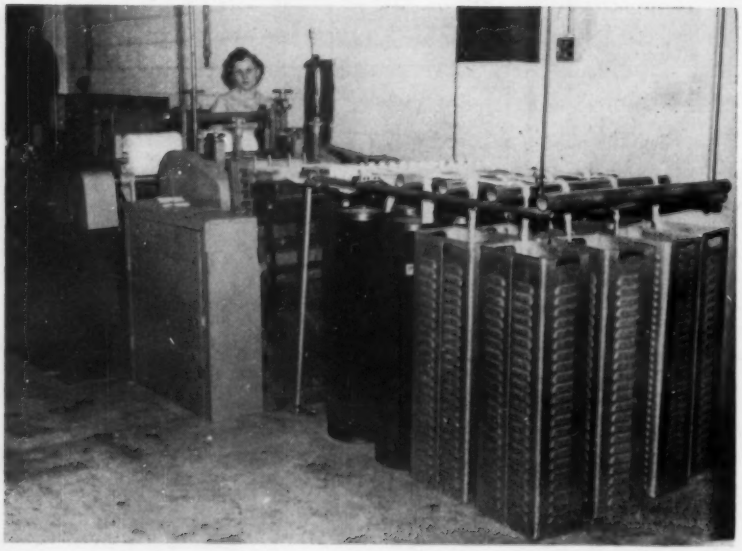
How Caron Runs
HIGH-BULK ORLON

- Thirteen operations, from stretching and stapling to winding, are used for processing high-bulk Orlon yarns at Caron Spinning Co.
- The material is checked at each operation from tow to yarn, and checks on the final product include stretch testing.

By **JAMES H. BLORE,** Associate Editor, TEXTILE WORLD



ORLON TOW passes through the Turbo stapler to be stretched and broken into fibers up to 8 ins. long.



RELAXED TOW in the rectangular cans is fed to a breaker box along with a similar amount of stretched tow.

ONE OF THE PIONEERS in the manufacture of high-bulk yarns, Caron Spinning Co., Robesonia, Pa., is now steadily producing these yarns. Most yarns spun are all-Orlon, but blends such as Vicara with high-bulk Orlon are now in commercial production.

Yarn sizes of the 100%-Orlon yarns range from 1/15s to 1/30s. Two-ply yarns in the same numbers are also made. Before the product is finished, the Orlon tow passes through 13 operations. The material is checked at each operation to insure that the final product is without defects and has the correct shrinkage characteristics.

Orlon tow is received from the fiber producer in 225-lb. cartons. The tow consists of 3-den. filaments with a total size of 470,000 den.

Staplers Stretch Tow

Two Turbo staplers are the first machines to process the tow. The staplers stretch the tow about 30% and break it into fibers up to 8 ins. long.

The cartons of tow are arranged close to the delivery end of the machines so that the operator can check the tow as it leaves the carton and watch the top as it falls into a sliver can. The tow is run over the stapler through tension rods suspended from the ceiling and fed into the stapler in sheet form.

A series of rolls controls the tow and delivers it to a heated chamber controlled at 310° F. A second series of rolls, running faster than the first series, stretches the filaments while they pass through the heated chamber. A fan cools the second series of rolls to keep the heat from causing the stretched tow to lap around the rolls.

After passing under a breaker roll, the material is delivered into a crimper box, from where it falls into a can. Stretched tow to be relaxed falls into rectangular aluminum cans, while tow

from the second stapler falls into 12-in. round cans.

The operator constantly watches the material passing through the stapler. Any faulty material is removed and put into waste. Each stapler delivers about 100 lbs. of top per hour.

Top Relaxed in Steam Chamber

The top to be relaxed is then treated in a Turbo steam chamber for 20 mins. at 240° F. Temperature is controlled to ±1° F., and a thermometer is placed in each can. Any deviations from the correct temperature will cause the material to be used for other yarns.

Cans of the relaxed tow are then put up at the back of a Holdsworth breaker box along with a similar number of cans of the unrelaxed tow. This process starts to blend the fibers. The back and front rolls are spaced 6 ins. apart to eliminate the extra-long fibers and give a normal fiber diagram that is needed for an even but lofty yarn.

Two 200-grain tops are delivered from the breaker box and are put up into balls about 12 lbs. each. Four pin-drafter operations follow. Warner-Swasey pin drafters are arranged one behind the other so that the material flows in a straight line down the room. The pin drafters further blend the fibers and even out irregularities.

The first pin drafter converts the balled tow to sliver that is handled in 16-in. cans. Six balls in each creel at the rear of the pin drafter are turned by two rotating rolls under each ball so that no tension is placed on the material.

Each subsequent pin-drafter operation uses finer pinning with a range from 18 to 22 teeth per inch. Six slivers are put up at the back of each pin drafter, and the final pin-drafter product results in a sliver weighing 80 grains per yard.

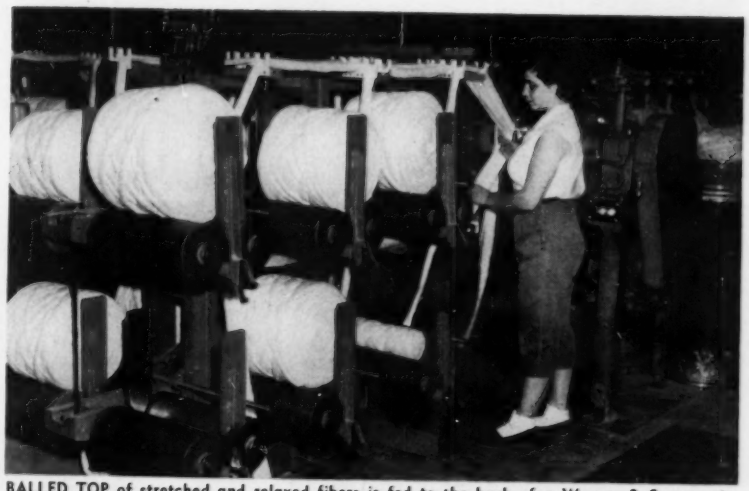
Sliver Is Checked Daily

Weight checks are made on each side of every pin drafter twice daily. At the same time, the sliver is checked with a Pacific evenness tester to guard against size variations in the yarn. The same test is made after the introduction of each new lot of sliver.

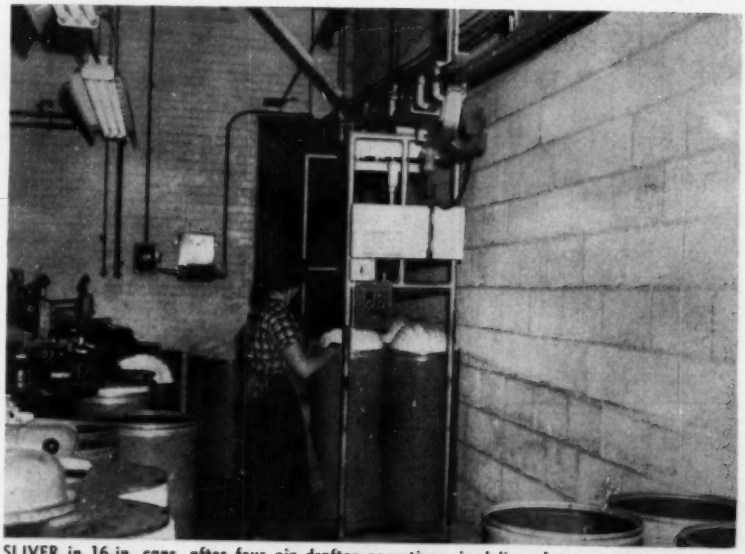
The material flows smoothly to the end of the room, where a conveyor system runs along the full length of the wall. Sliver cans are loaded directly onto the conveyor truck from the pin drafters, and eight cans are automatically delivered to the roving section.

Whitin Quik-Set roving frames are

CONTINUED ON PAGE 180



BALLED TOP of stretched and relaxed fibers is fed to the back of a Warner & Swasey pin drafter to be coiled in cans.



SLIVER in 16-in. cans, after four pin-drafter operations, is delivered to rovers on an automatic conveyor.

ROVING is made on Whitin Quik-Set roving frames. Frames are cleaned off at the end of each doff.

TENSIOMETER on the center bar records the thread tension and is checked every 15 mins. to keep quality constant.

YARN LET-OFF is controlled by this device, which speeds the yarn beam by electrical contact if the tension becomes too tight.

NEEDLES AND SINKERS are cleaned with an air hose after brushing with a solvent cleaner at the end of every fabric roll.

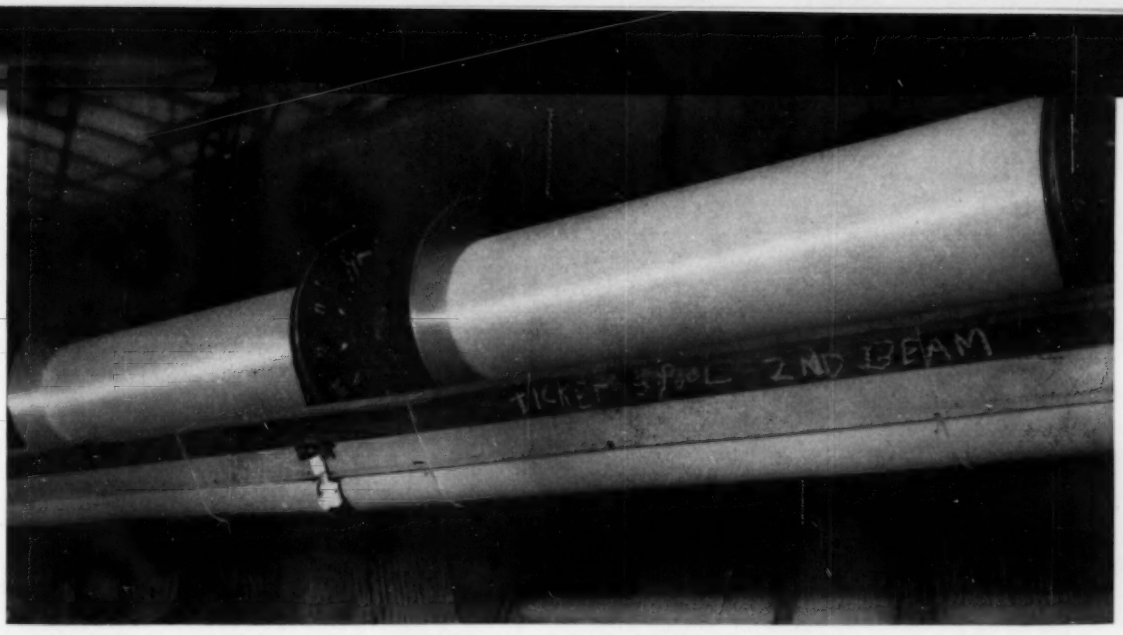
RUBBER THREADS are tied individually at each warp change. The new Kidde machiness knit power net at 500 courses per minute.

Fablok Mills Uses New Ideas For RASCHEL NETS

To get top-quality power-net and laundry-net fabrics, this New Jersey raschel mill has adopted new ideas in warp knitting that include—

- **Constant thread-tension control**
- **Wide beams from the yarn producer**
- **Regular cleaning schedules**

By JAMES H. BLORE, Associate Editor, TEXTILE WORLD



RAYON YARN is knitted from 42-in. beams supplied by the yarn producer. Quality is better, and warping time has been saved.

Fablok Mills, Inc., Irvington, N. J., specializes in the production of nylon and rayon power nets and nylon, Orlon, and Dacron laundry and dye nets. Kidde raschel machines installed at Fablok include the latest four-bar 36- and 48-gauge Model E-6 and E-4 machines.

The laundry nets, which are completely finished in the Irvington plant, are made in different patterns and 16 sizes. These nets are knitted on the Model B and C machines, while the power net is made on the Model E machines.

To produce top-quality nylon power net with a consistent stretch and yield, the threads on the knitting machine are controlled with tensiometers that record the tension on the thread in grams. One tensiometer is fixed to the center pivot-bar bracket at the back of the machine, and one rubber thread is run over the disks of the tensiometer.

A second tensiometer controls the nylon threads. The knitter checks the readings on the dials every 15 mins. If the readings deviate from the standard readings, which depend on the fabric style, an adjustment is made to the yarn let-off to bring the readings back to standard. On one style, the nylon threads are controlled to 17 grams and the rubber is controlled at 35 grams.

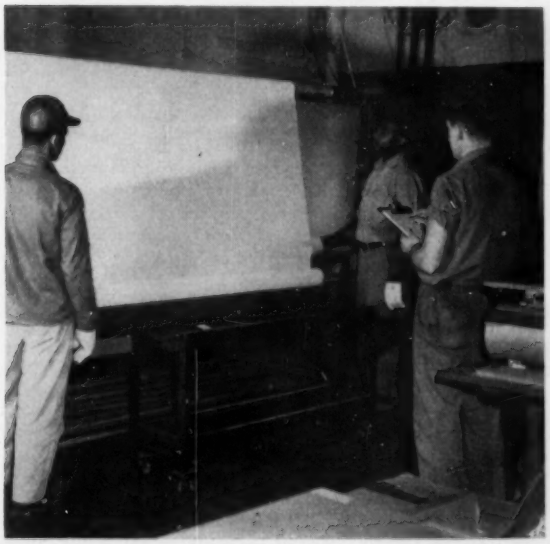
Wet-Out Tests Are Made

When new rubber beams are entered, a wet-out test is made before production is started to make certain the standard has not varied. A fabric sample is knitted from the new beams; a piece of fabric is cut off, wet out, and dried. The sample is then measured and checked for relaxation and stretch.

Another quality device fitted to the new machines, which run at 500 courses per minute, helps to maintain a constant control on the nylon threads. Ten threads are run around a series of bars on the let-off device, which is held in a position near the warp sheet.

One of the bars is free to move; and if the warp sheet tightens, the bar is pulled down to operate a limit switch. The let-off control motor is started

CONTINUED ON PAGE 182



INSPECTION of power nets is done over this frame. The type of fault is recorded. Fabric is then rolled on aluminum tubes.

LAUNDRY NETS are cut out in 16 different sizes with a circular knife. Laying-up machine piles fabric up to 75 thicknesses.

How To Get The Most Out of PAINT

Modern scientific methods are replacing hand-and-thumb rules for painting plants and equipment. Four factors are necessary to establish a well-rounded maintenance program—

- **Inspection of old surfaces**
- **Surface preparation**
- **Selection of paint**
- **Application of paint**

DURING THE PAST SEVERAL YEARS, painting techniques have changed from hand-and-thumb rules to more scientific and useful methods.

The trend in industry toward the use of specification paints is increasing in spite of claims that paint products can be used for any purpose. The perfect all-purpose paint for all surfaces under all conditions has not been made. Testing and evaluating one tradename product against another is not satisfactory except where such paints are formulated and applied with specific chemical and physical requirements.

The use of specification materials assures consistency and affords protection against probable changes in formulation.

Prepare the Surface First

Surface preparation is one of the most critical and important factors that govern the performance of paints. There is no acceptable substitute for adequate surface preparation. Surface preparation consists of proper cleaning combined with a treatment of the cleaned surface to increase its affinity for subsequent painting.

The increasing number of new coatings now on the market requires a broader knowledge of precise end conditions. Correct surface preparation is necessary to produce the maximum adhesion and bonding.

Numerous investigations on mechanical and chemical cleaning have been made and evaluated. Now you have only to select the most appropriate method for the job to be done. For instance, blast cleaning is considered superior to wire brushing. However, it is more costly and is often undesirable.

Wash-primer, a pretreatment phosphate-type brushed-on coating, has been used extensively on metals. This treatment, developed by the Navy, gives excellent results when it is used on blast-cleaned or chemically cleaned surfaces. The treatment is particularly good for surfaces exposed to severe corrosive conditions or surfaces immersed in water.

Painting Systems for Wood

The following painting systems are good ones for exterior and interior wood, masonry, and metal surfaces. These requirements should not be considered mandatory but can be used as a guide for selecting the most appropriate coating system for a given purpose.

Prime exterior wood structures with a ready-mixed lead-in-oil primer. This paint is the conventional outside house primer. Top-coat the primer with a ready-mixed titanium-lead-zinc-in-oil exterior house paint. Under special conditions, various other top coats may be used.

Prime interior wood with an alkyd fast-drying enamel undercoat. Finish the surface with one of several top coats, depending on whether a flat, semigloss, or gloss finish is desired.

Ways To Paint Concrete

Concrete and masonry are not normally painted unless paint is required for dampproofing or can be justified on the basis of appearance.

Coat exterior masonry surfaces with two coats of cement water paint or two coats of exterior ready-mixed concrete-and-masonry lead-zinc-titanium-in-oil type of paint. This paint is sold commercially as brick and stucco paint.

No paint or coating will repair old leaky concrete and masonry walls or seal old joints and cracks. The only ade-

From a paper presented by Fred B. Leitzsey, Dept. of the Navy, Washington, D. C., at the recent Seventh National Plant Maintenance & Engineering Conference in Philadelphia, Pa.

Comparison of Values

Cover coating	Cost			Ease of application	Resistance to						
	Cost per gal.	Cost per mil thickness	Cost per year		Temperature	Weather and sunlight	Solvents	Salts	Alkalis	Acids	Total
Neoprene	2	10	10	6	10	7	3	10	10	6	74
Styrene copolymer	6	7	7	9	7	6	3	10	10	7	72
Vinyl	5	6	8	9	7	8	4	10	7	8	72
Chlorinated rubber	5	5	7	9	6	7	3	10	10	8	70
Saran	3	5	6	9	7	7	5	10	7	9	68
Epoxy	1	6	7	7	9	6	6	10	7	6	65
Alkyd	7	8	2	10	5	9	2	6	2	4	55
Asphalt	10	6	3	9	2	5	1	10	7	5	58
Oil base	9	9	1	9	3	10	2	5	1	2	51
Polyvinyl acetate	8	6	4	9	5	7	2	3	2	3	49

CORROSION RESISTANCE of paints applied to metals is shown in the columns as comparative values. High numbers show high values.

quate way to make such repairs is to repoint the joints and cracks and refill with new mortar. However, the Navy uses a transparent colorless silicone water-repellent coating to make above-ground sound-concrete and masonry surfaces water repellent. These coatings contain a minimum of 5% silicone resin.

Coat interior concrete surfaces with chlorinated rubber-base paint. Another good method is to use a rubber-base paint as a surface sealer and cover it with a conventional interior paint.

Paints for Specific Uses

Complete painting systems to meet specific requirements are shown in the accompanying table, which gives comparative values between various systems for corrosion resistance on metals. Other factors, such as shelf life, drying time between coats, and the application instructions of the manufacturer, should also be considered.

In the table, the values of each category are comparative; the greatest value is 10 points. For the cost and ease-of-application categories, 10 indicates the least costly and the easiest to apply, respectively.

In the resistance-to-attack column, 10 indicates no attack; and smaller numbers indicate materials less resistant to attack. In the columns of solvents and acids, there is no 10 value since none of the coatings listed are completely impervious. The highest values in these two columns are saran with a value of 9 for acid resistance and epoxy with a value of 6 for solvent resistance.

Four Application Systems

Improper application of paints may result in premature failure of the coating even when the surface is cleaned and treated properly. Negligence in application may result in greater variations than that exhibited between brush and spray techniques.

The four major methods of paint application are brush, spray, roller, and dip. Each method has advantages and disadvantages, depending on the job to be done. Roller coating has increased in use during recent years, and the results are excellent where spray coating cannot be used because of hazards from overspray or flammability of the solvent.

Paints are normally applied as they are supplied in the container without further thinning. When thinning is considered necessary, do it only under the direction of a competent supervisor. Nearly every painter considers himself an expert at thinning and does more harm than good.

Temperature and humidity govern when paints may be applied. The minimum temperature is 45° F., and the maximum is 90° F. The range of relative humidity is 40 to 70%.

When Do Paints Fail?

Paint reaches the end of its useful life prematurely for many reasons. In the northeastern part of the U.S., the average useful life of a two-coat application of paint on wood is four years in rural areas.

Paint should serve its useful life by a gradual chalking. On exterior paint, a gradual loss of gloss is followed by the appearance of a fine chalky material. The duration of chalking varies with the film thickness, area, and conditions of exposure. The main cause of chalking is the oxidative effects produced from ultraviolet rays in sunlight primarily on the paint vehicle.

Paint failure does not mean that the paint has completely chalked off. But the poor appearance and insufficient film thickness to provide adequate protection warrant repainting. The proper surface condition should be present so that new paint can be applied with a minimum of surface preparation.

Improved scaffolds and extension handles let cleaners and painters get closer to the job to be done. Considerable time is saved by using scaffolds and rigging properly designed to suit the job. For specialized use, equipment such as spider cages, boatswain's chairs, hydraulic lifts mounted on trucks, and platforms have proved successful.

STAPLE FIBER is blended in three Saco-Lowell blending feeders that employ the sandwich method.

How Ora Cards and Spins
SPUN SYNTHETICS

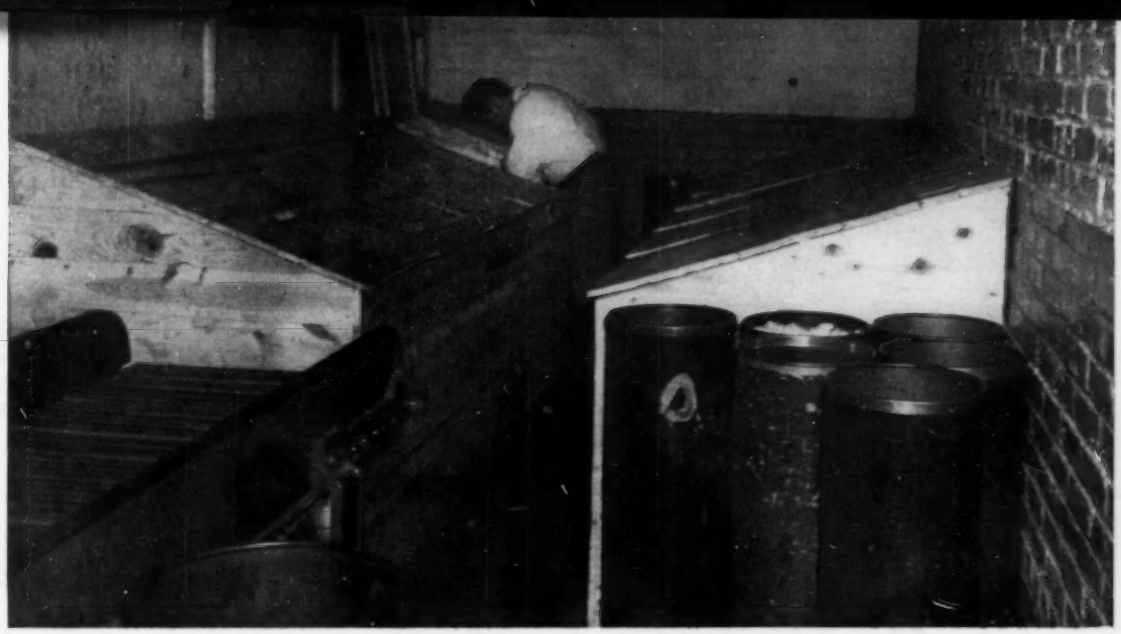
Ora Mills Co., Shelby, N. C., is now 100% on spun synthetics. More than 15 blends are carded, spun, or twisted at the same time on the same machinery. Highlights include—

- Sandwich blending
- Metallic card clothing
- Large-package spinning
- Electronic slub catchers

By **WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD

METALLIC CARD CLOTHING is not ground; fillet grinding cycle is 22 days.

SPINNING FRAMES have been equipped recently with new large-package spindles.



REWORKABLE WASTE is carefully classified, weighed, and stored in separate bins.

ORA MILLS Co., Shelby, N. C., formerly made cotton goods exclusively. But markets changed, and this mill now is 100% on spun synthetics. Here's how Ora cards and spins novelty slub and effect yarns from 1½- to 3-in. staple.

The present yarn range is from 4½s to 30s, mostly rayon and acetate. As many as 15 blends at one time are processed on the same machines. To keep the fibers from getting mixed, the mill cleans each machine after each blend passes through it. Another precaution against contamination is the use of portable plastic window-screen curtains between machine sections and individual machines. These screens intercept air-borne fly.

The synthetic stock is blended in three Saco-Lowell blending feeders and one waste feeder. The sandwich-blending method is used.

Adjacent to the blenders is a waste machine for reworkable waste. All waste is separated, classified, weighed, and kept in separate bins. Carefully proportioned quantities are fed back into the stock.

DOUBLE THREAD GUIDES (arrow) are used on the twisters to produce seed yarns.

The blended stock is tinted for identification and blown through a pneumatic pipe to the picker room where two Saco-Lowell single-process pickers with blending reserves produce a 52-yd., 14-oz. lap every 7 mins. Each picker has two Kirschner beaters running 960 rpm.

The stock is carded on 32 40-in. Saco-Lowell and Whitin cards producing a 55-grain sliver at 8 lbs. per hr. Ten of the cards have Hollingsworth metallic clothing. These cards have a doffer speed of 10 to 11 rpm., compared with 8 to 9 rpm. for the cards with fillet wire. Grinding cycle for the fillet-clothed cards is 22 days; the cards with metallic clothing are not ground at all. Some of the cards are equipped with ball-bearing comb boxes and ball-bearing lickerin boxes.

There are 50 deliveries of Saco-Lowell standard four-roll breaker and finisher drawing producing a 55-grain sliver at 120 ft. per min. Four Saco-Lowell combers are available for cotton yarns when the market calls for it.

Roving equipment consists of five 9x4½ Saco-Lowell FS2 frames producing 0.75- to 3.00-hk. roving.

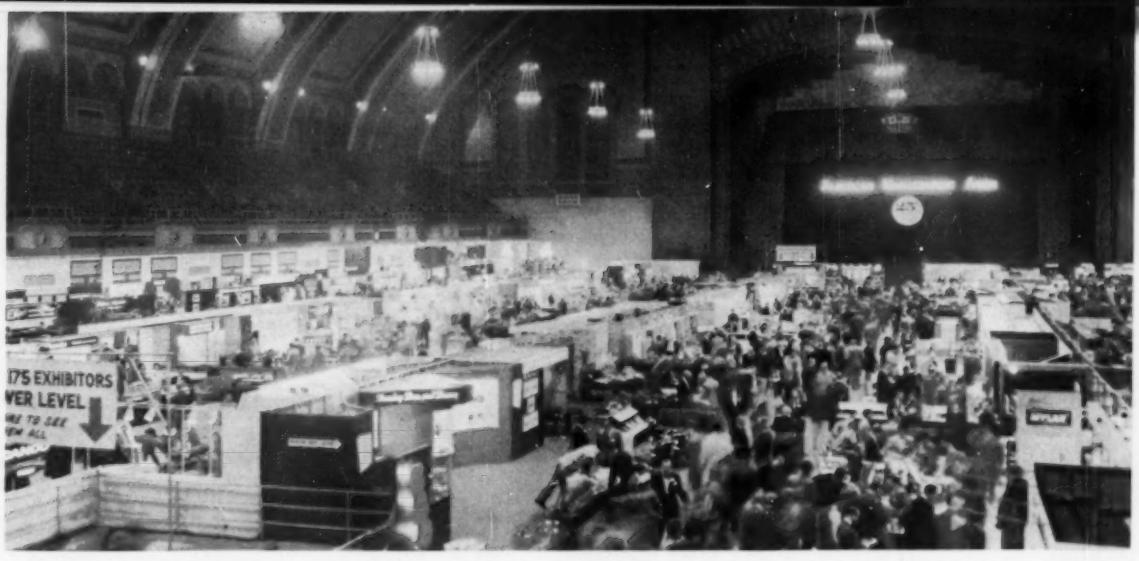
In the spinning room are 12 Shaw frames, four Roth frames, and 12 Z2 frames. The Shaw frames have 4-in. gauge and 2¼- to 3-in. rings. The other frames have 3½-in. gauge and 2¼-in. rings.

The 24s yarn is spun on the Z2 frames from a 50% rayon-acetate blend. Hank roving is 2.50, twist multiplier 4.25, front-roll (1-in. dia.) speed 136 rpm., ring size 2¼ ins., traveler speed 5,280 ft. per min., and draft 19.

The Roth frames were equipped recently with New Era spindles that require no oiling and produce a larger package. Electronic slub catchers are being installed on all spinning.

Novelty slub and effect yarns are twisted on 180-spindle, 4½-in. gauge Whitin ball-bearing twisters. Up to six ends can be twisted into one thread. Core yarn runs under the top roll at half the speed the effect yarn runs under the bottom roll. Double guides are used for seed yarns. The average package weighs 1 lb.

Ora maintains a modern opening room and keeps on hand a supply of high-grade cotton for use if the spun-synthetics market becomes unprofitable. However, the mill's flexibility and know-how in the synthetics field are so broad that cotton is seldom processed any more.



Textile Highlights From the PACKAGING SHOW

Improved packages for finished textiles and improved machines for loading, labeling, and sealing packages were much in evidence at the National Packaging Exposition in Atlantic City.

While few of the larger machines exhibited were designed specifically for packaging textile products, a number of semiautomatic bag loaders and sheeters were on display.

Auxiliary equipment such as labelers, sealers, printing equipment, and various carton-closing machines were of considerable interest.

Emphasis this year appeared to be on polyethylene film in sheets and tubes. The product is more transparent than formerly, and its use has grown rapidly. However, films of cellophane, cellophane-polyethylene laminates, vinyl, butyrate, rubber hydrochloride, and polyvinyl chloride were all demonstrated for textile packages.

Du Pont's Mylar, a relatively new polyester film, was displayed on textile items and being used in a Hayssen machine to wrap sponges.

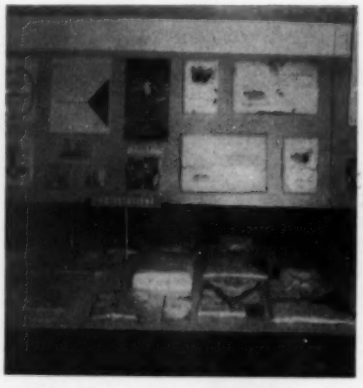
Textile packaging still requires considerable labor because of the soft and ununiform nature of many products. Hand filling of bags and hand sealing of sheets partially folded by machine have become standard and appear to have reached a satisfactory compromise costwise between manual methods and the very expensive fully automatic machines that have been developed for packaging other products.

Following are descriptions of some of the newer items and developments of interest to TEXTILE WORLD readers with packaging problems.

Mylar Packaging

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., showed several items packaged in Mylar, its polyester film. Two-way orientation of this material makes it very strong.

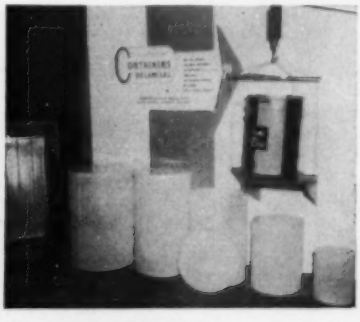
Circle A-1 on Reader-Service Card



Polyethylene Packages

Textile items in many categories were displayed in polyethylene wrappers by Celanese Corp. of America, 180 Madison Ave., New York, N. Y.

Circle A-2 on Reader-Service Card



Polyethylene Drums

Delaware Barrel & Drum Co., P. O. Box 1648, Wilmington, Del., showed polyethylene drums in several sizes and types. Designed either for self-support or as steel-drum liners, the containers are corrosionproof, light, and resistant to chemicals.

Circle A-3 on Reader-Service Card

Polyvinyl-Chloride Films

A number of individually packaged textile items were shown wrapped in Vitafilm, the polyvinyl-chloride film made by Goodyear Tire & Rubber Co., Akron, Ohio.

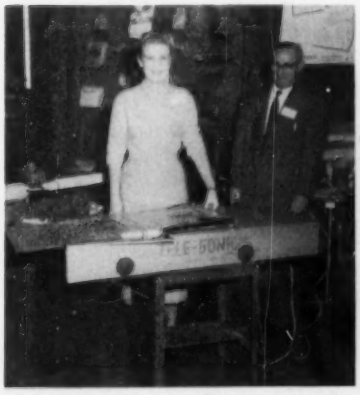
Circle A-4 on Reader-Service Card

Stapling Pliers

A pointed-blade stapling plier that punctures corrugated cartons is useful in fastening the top or bottom flats of shipping cartons. Shown by Bostitch, Inc., Westerly, R. I., Model P6-8P is designed for stapling operations that do not warrant expensive equipment.

A heavier model called P4-8P has a 4-in. throat and will handle cartons requiring stapling up to 4 ins. from the edge.

Circle A-5 on Reader-Service Card



Bag-Filling Machine

An improved-model bag filler was demonstrated by TeleSonic Packaging Corp., 208 W. 27th St., New York, N. Y. Supplied in models that will accommodate bags from 3 ins. to 24 ins. in width, the machine opens the top bag of a pile with a controlled air stream and the operator guides the product into the open bag and off the pile in one motion.

Circle A-6 on Reader-Service Card

Rubber-Chloride Film

Pliofilm, shown by Goodyear Tire & Rubber Co., Akron, Ohio, is a clear, tough material adaptable to packaging textiles. Marketed in gauges of 0.0004 to 0.0025 ins., the film can be heat-sealed, cemented, stitched, or taped. It prints well with special inks and can be worked in regular packaging machinery.

Circle A-7 on Reader-Service Card

Hand-Held Air Tacker

An automatic tacker powered by compressed air was demonstrated by Eastern Duo-Fast Corp., 176 Ave. of the Americas, New York 13, N. Y. A feature of the model is a $\frac{7}{8}$-in. lip extension that permits accurate placing of staples and stapling in otherwise inaccesible areas. Operating air pressure is 75 to 125 lbs. per sq. in.

Circle A-8 on Reader-Service Card

Package Imprinting Machine

Designed to complete necessary information such as lot, size, color, or style on folded boxes that have been preprinted, the Model 4800 package imprinting machine shown by Pitney-Bowes, Inc., Walnut & Pacific Sts., Stamford, Conn., can produce up to 7,500 units per hour. The rotary drum can be set with rubber or metal type to print areas up to 4 ins. x 18 ins. Minimum thickness of stock to be printed is 0.01 in.; the machine will handle cartons 18x18 ins.

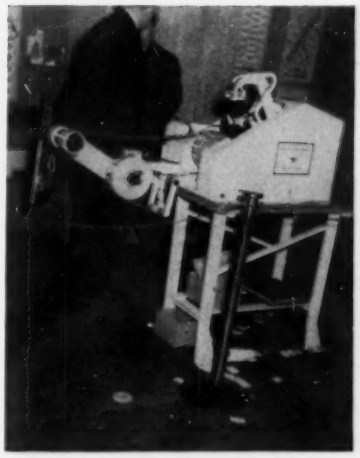
Circle A-9 on Reader-Service Card

Label Dispensers, Moisteners

A series of hand-operated label dispensers and moisteners was shown by Dispens-A-Label Devices, 201 Boggs Ave., Pittsburgh 11, Pa. Glued labels are stacked on the machine, which releases one at a time as the operator exerts pressure on the top label. Models are available that moisten the entire label or only the ends.

For delayed-tack adhesives, a heated-roll model can be supplied.

Circle A-10 on Reader-Service Card

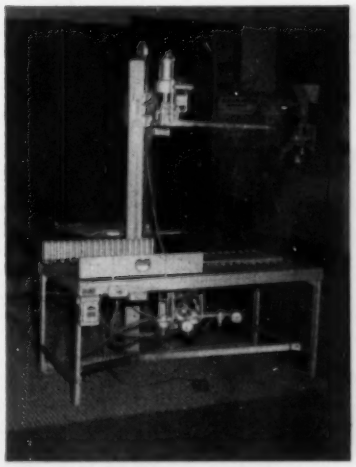


Label-Imprinting Machine

A label-imprinting machine that handles rolls of partially printed labels and prints completing information on top or end labels was demonstrated by Markem Machine Co., Keene, N. H.

Working with rubber plates, electros or master plate to areas $2\frac{1}{2}$x$5\frac{1}{2}$ ins., the unit produces 125 labels per minute and will reroll or cut and stack labels as required. Automatic features available are counter, roll-end shut-off, and stacker control.

Circle A-11 on Reader-Service Card



Carton Stapler

Tops and bottoms of corrugated cartons are stapled simultaneously on a stapler shown by International Staple & Machine Co., Herrin, Ill.

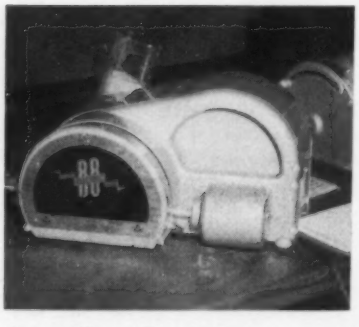
Control of staple penetration prevents damage to filled cartons. The machine is instantaneously adjustable to cartons 5 to 36 ins. high and will fasten up to 350-lb. double-wall cartons.

Circle A-12 on Reader-Service Card

Air-Operated Carton Stapler

Air power replaces mechanical leverage in a carton stapler announced by Eastern Duo-Fast Corp., 245 N. 16th St., Philadelphia, Pa. The foot lever is depressed to open the air valves in the stapling head. Staples can be inserted to a depth of 9 ins.

Circle A-13 on Reader-Service Card



Power Tape Dispensers

A line of electrically-powered dispensers for gummed tape was demonstrated by Nashua Package Sealing Div. of Nashua Corp., Nashua, N. H.

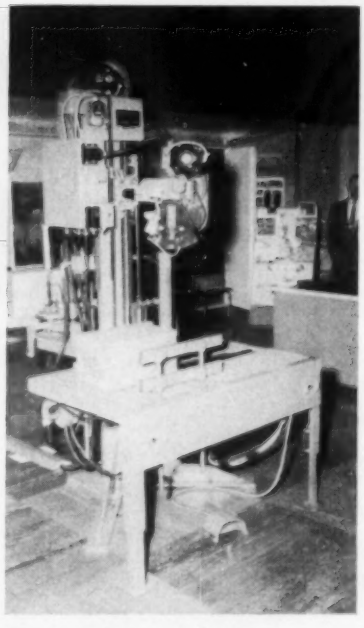
Foot switches operate the machines; so the operator's hands are free to handle cartons and tape. One model dispenses either of two preselected lengths of tape when a two-position switch is thrown by the operator's foot.

Circle A-14 on Reader-Service Card

Laminated Film

A packaging film that combines the properties of cellophane and polyethylene was shown by Cheslam Corp., 285 Nepperhan Ave., Yonkers, N. Y. Called Cellothene, the material is produced by laminating a film of cellophane with a film of polyethylene. Extra toughness and transparency result from the combination.

Circle A-15 on Reader-Service Card



Top and Bottom Stapler

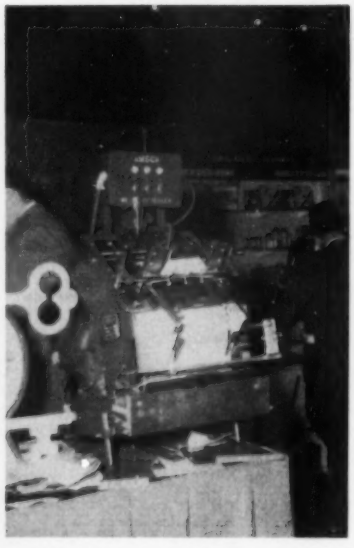
Automatic adjustment to carton size is featured in the Model D12BT stapler shown by Bostitch Inc., Westerly, R. I. The standard model will handle cartons from 4 ins. square to 24 ins. square. Length is not limited. Stapling heads are power driven; adjusting brackets require 5 cu. ft. per min. of air at 80 lbs. per sq. in. Top and bottom flaps of cartons are stapled simultaneously, or top flaps only, if desired.

Circle A-16 on Reader-Service Card

Air-Operated Staplers

Designed to mechanize light nailing operations, three air-driven staplers were shown by California Wire Products Co., Inc., 326-328 N. E. Third Ave., Visalia, Calif. Staples from $\frac{3}{8}$ in. to 1 in. wide and up to $1\frac{1}{4}$ ins. long can be handled by the machines. Fastening plywood to wooden frames is a major use for this type of fastener.

Circle A-17 on Reader-Service Card



Bag Sealer and Labeler

A machine that seals bags made of heat-sealable materials and applies a header label was shown by Amsco Packaging Machinery, Inc., 31-31 48th Ave., Long Island City 1, N. Y. Adaptable to small textile items, the machine can be adjusted to handle labels from $2\frac{1}{2}$ to 8 ins. in width. Nonheat-sealing materials are sealed by thermoplastic label stock. Label feed is by vacuum. Heat control is automatic and can be adjusted to suit the film being worked.

Circle A-18 on Reader-Service Card

Tape Dispenser

A tape dispenser that provides two preset lengths of tape was announced by Seal-O-Matic Dispenser Corp., 52 W. Houston St., New York 12, N. Y. The hand-operated machine delivers and moistens one or the other of preselected lengths of tape, depending on how the operator applies side pressure to the actuating lever.

Circle A-19 on Reader-Service Card

CONTINUED ON PAGE 190

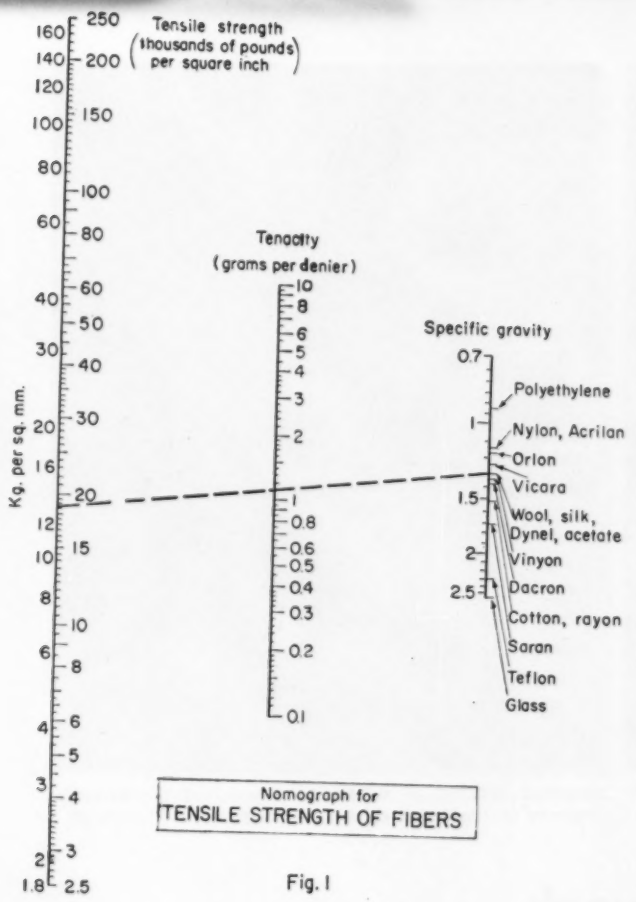


Fig. 1

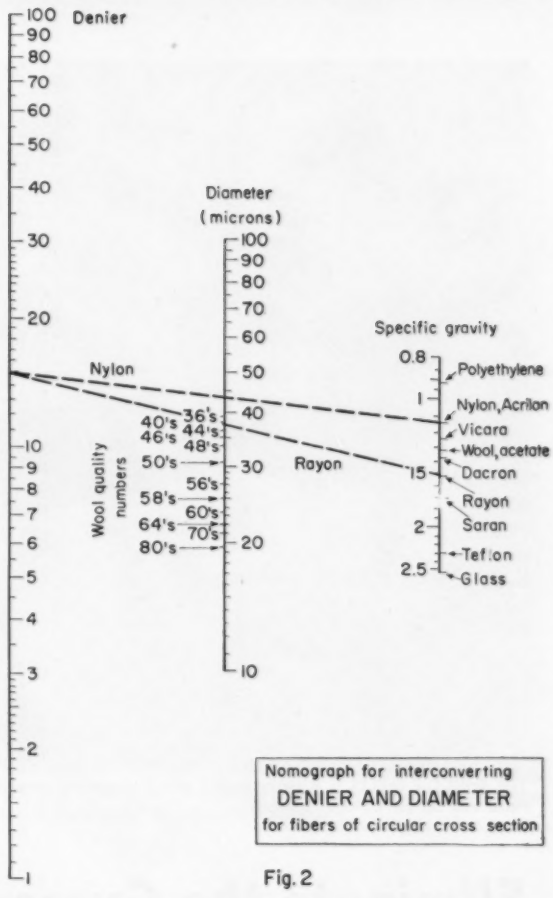


Fig. 2

Convert Fiber Characteristics With These Nomographs

If you know the specific gravity of a fiber these nomographs will quickly give you—

- **Pounds per square inch from tenacity in grams per denier**
- **Denier from fiber diameter**

By ROBERT SAXON, Harris Research Laboratories

FIBER TECHNICIANS often find it necessary to convert tenacity from grams per denier to pounds per square inch or to convert fiber diameter to denier. Equations containing the appropriate conversion factors are available, but their use is tedious if more than one or two values are to be converted.

It is much more convenient to employ nomographs, from which the answer may be read directly with no more complicated device than a straightedge.

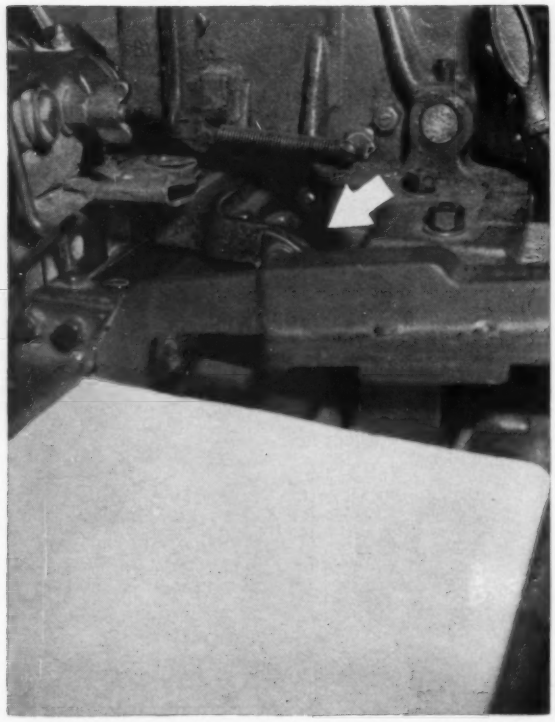
Fig. 1 is such a nomograph for interconverting units of tensile strength. In the right-hand column are listed the specific gravities of all the common fibers. A line drawn from the specific gravity of a particular fiber to the known tensile strength in one set of units, in one of the other columns, intersects the third column at a place which gives the result directly in the other set units.

For example, what is the tensile strength in pounds per square inch of a wool fiber whose tenacity is 1.1 grams per denier? Connect *Wool*, in the third column of Fig. I, with 1.1 grams per denier in the middle column, and read the result, 18,800 lbs. per sq. in., where this line crosses the left-hand column.

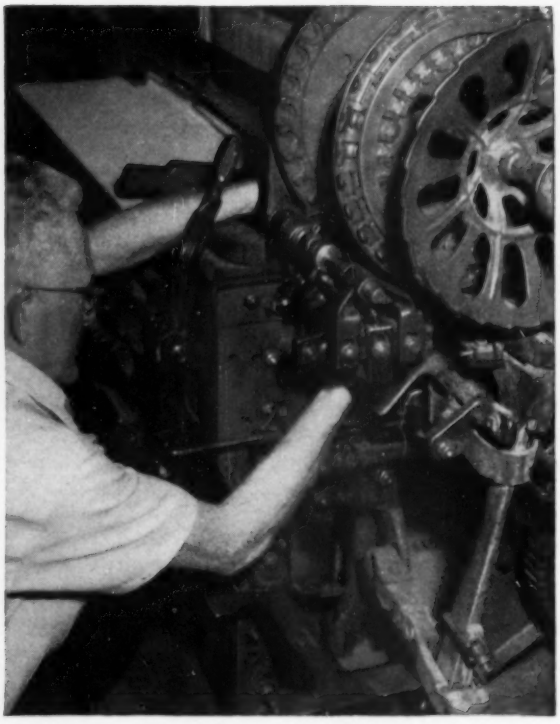
Fig. 2 is a similar nomograph for interconversion of denier, absolute diameter, and wool quality numbers and is used in exactly the same way. As an example, a 15-den. nylon filament has a diameter of 43 microns, while a rayon filament of the same denier is smaller, 37 microns.

Since there is no simple way of assigning a single diameter to fibers with irregular cross sections, fibers such as cotton, Orlon, and silk have been omitted from Fig. 2.

These charts furnish a simple method of passing from one system of units to another and show that the denier and absolute unit systems are not equivalent and that the specific gravity of each particular fiber must be taken into account in the conversion.



THE SHUTTLE FEELER is a safety device, and it should be correctly timed and set for efficient operation.



CORRECT SETTING of the transferrer latch and the bunter is necessary for trouble-free changing of filling.

Eliminate the Guesswork From BATTERY MAINTENANCE

● Although the filling-changing mechanism of a loom contains many parts and motions, it will give trouble-free service with the right kind of setting and maintenance. Here's how to check and set some of the parts —

By WILMER C. WESTBROOK, Assistant Editor, TEXTILE WORLD

MANY WEAVING TROUBLES can be traced to improperly set battery-changing mechanisms. There can be dire results if the sequence of movements, the timing of the parts, and the positioning of the shuttle and bobbin are not correct. A failure of the filling-changing motion can cause a broken shuttle, warp break-out, broken loom parts, defective cloth, loss of production, or personal injury.

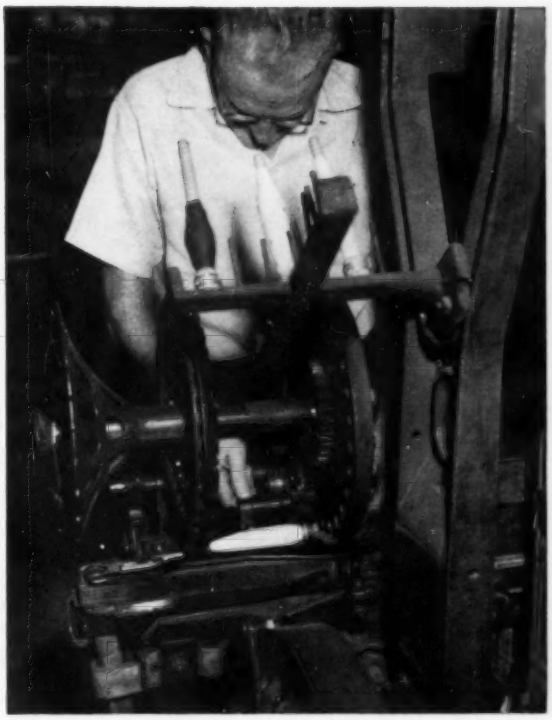
All the various movements of the loom entailed in the replenishing of filling must be completed in less than ½ sec. It can be seen that precise setting and timing are necessary for trouble-free operation. On the heavier fabrics such as flannels, the bobbin is exhausted and must be replaced every 2 mins. or less.

The act of changing filling places a severe strain on all parts of the loom, especially on the filling-changing mechanism. An ammeter at the loom motor will show the sudden load placed on the motor by the operation of the filling feeler, the bobbin transferrer, and connections.

Many Motions Involved

A number of movements occur in the fraction of a second required for one pick of the loom. Action is imported to the filling feeler blade, the connecting rod, the lifting lever, the filling-feeler slide, the starting rod, the shuttle feeler, the latch depressor, the transferrer, the thread cutter, the feed pawl, and the battery disk.

With so many parts and movements being involved in an operation of such close timing, precise settings are a must for trouble-free performance. However, if all the parts of the filling-changing mechanism are correctly installed and given nominal care, the filling will be replenished hundreds of



THE TRANSFERRER must have proper clearance to replenish the filling without hanging and causing serious damage.

THE SHUTTLE must be correctly boxed for the transfer. Packing can be used under the lay-strap if necessary.

times a day without a failure or false change.

The first requisite of an efficient filling-changing motion is a correctly aligned hopper stand. The hopper stand is aligned when the loom is first assembled and is held in place by dowel pins in addition to bolts. It is not necessary to make any changes in this part unless a new hopper or breast-beam is installed. A number of gauges are needed for the alignment of the hopper stand, but this is a job that is seldom necessary.

Gauge Can Be Used

The lay must be placed in proper position, and this setting can be checked with the lay gauge. The lay can be moved by means of the crank-arm eccentric pin in the older looms and by adjustment of the length of the crank arm in the newer models.

Assuming that the filling-feeler mechanism is operating correctly and a filling transfer is indicated, the shuttle feeler should be checked. The shuttle feeler is a safety device and, if set correctly, will prevent an attempted transfer when the shuttle is not fully boxed.

The shuttle-feeler tip should clear the lay end and not touch the back box. A gauge can be used to obtain recommended clearance. With the shuttle fully boxed, the shuttle spur should almost touch the feeler tip.

Follow Instructions

No exact measurements can be given for the settings of looms in general because these tolerances vary for different lots, types, and models of looms. The manufacturer furnishes setting-instructions sheets for each lot of looms that give specific figures for most settings.

A gauge can be used to position the shuttle in the right-hand box, or the alignment can be checked with a pencil and a filling bobbin.

To position the shuttle without using a gauge, pull the transferrer down until it touches the rings of the bobbin in the battery and make a mark on the head of the transferrer directly above the middle ring of the bobbin. Remove the bobbin from the battery, place it in the shuttle, and then push the shuttle as far as it will go in the right-hand box.

Move the lay forward until the bunter engages the latch and the transferer is pulled down to the bobbin in the shuttle. The pencil mark should be between the first and second rings of the bobbin, counting from the butt of the bobbin.

Correct position can be obtained by adding or removing packing under the lay strap, if necessary.

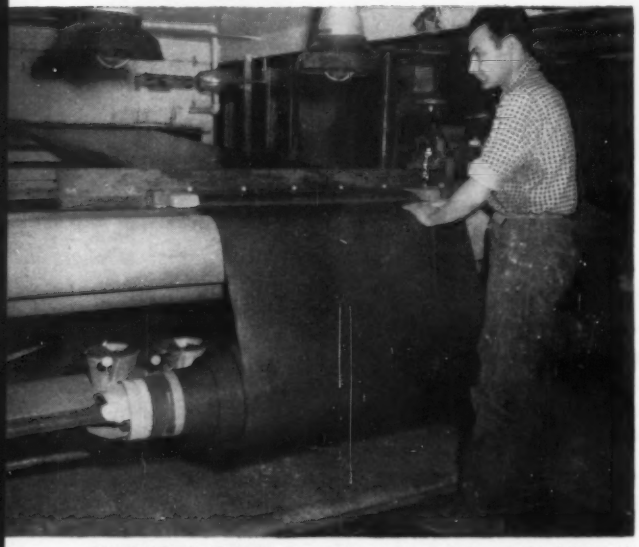
The $\frac{1}{32}$-in. clearance that is recommended between the transferrer and hopper stand is often ignored by loom-fixers. This is an important setting because it can affect the entire filling-changing mechanism. If the transferrer rests against the hopper stand, it will prevent the feed pawl from pressing firmly against the ratchet teeth. Vibration will cause movement of the disk and may cause serious damage to the loom if the bobbin is not directly above the shuttle at the time of transfer.

With the transfer of filling completed and the lay in extreme front position, there should be a clearance of from $\frac{1}{16}$ to $\frac{1}{8}$ in. between the transferrer and the rings of the bobbin in the shuttle.

There are many other things that will have an effect on the operation of the filling-changing mechanism. A weak picking motion, improperly boxed shuttle, worn parts, and defective bobbins are things to look for.

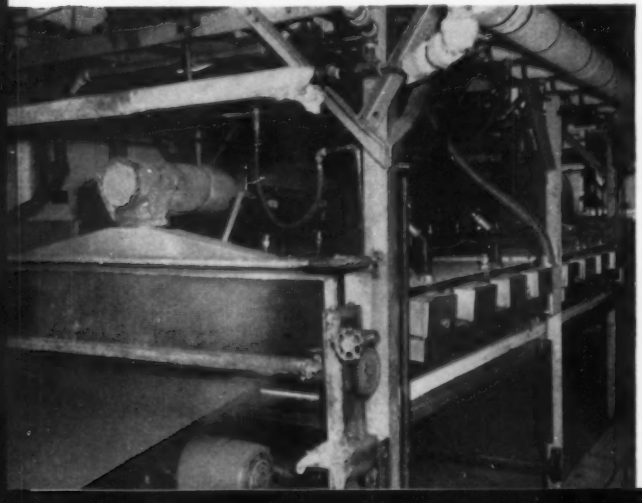
The automatic filling-changing mechanism and its auxiliary parts are the most complex motion of a loom. Yet, with correct settings and a minimum of preventive maintenance, the transfer of bobbin will be completed thousands of times without a failure or need of adjustment.

THREE-ROLL MILL is used to get complete mixing of pigments and plasticizers. The first two rolls are geared to produce a grinding action as the mix passes through a very closely set nip. Third roll skims a coat of mix off the second roll; and a doctor blade strips off the coating, which runs into a receiving drum.



COATING IS APPLIED by putting dope directly on the fabric. A knife edge scrapes off excess material, and the goods pass directly into the drying oven and then through the fusing oven. Coats are built up a little at a time to level out slight variations.

FUSING OVEN is equipped with resistance elements that heat circulated air to 380 to 400° F., enough to fuse the resin and bond it securely to the prepared fabric.



How Sawyer Produces Vinyl-Coated NYLON FABRICS

The Coated Fabrics Div. of H. M. Sawyer & Son Co., Watertown, Mass., is an old hand at coating cotton fabrics but was quick to see the advantages of combining nylon with the relatively new vinyl resins. Here's how it produces protective coverings that are—

- **Strong**
- **Light**
- **Durable**

By ROBERT W. PINAULT
Assistant Editor, TEXTILE WORLD

VINYL-COATED NYLON is probably the hottest item in the protective-covering field today. Combining strength and durability with light weight, these fabrics are being used to keep the weather off 12-ft. dinghies as well as 4-acre ball parks.

Filament nylon in a plain weave with a simple loop selvage is the foundation for the tarpaulins. H. M. Sawyer's Coated Fabrics Div. standardizes on two widths of goods in three weights: 2½, 4, and 5 oz. per sq. yd. The coated fabrics are built up to weights of 7, 10, 13.5, and 16 oz. per sq. yd.

Mixing the polyvinyl chloride, pigments, solvents, and plasticizer is a three-step process. First, the pigment and plasticizer are weighed out to meet laboratory formulas previously developed and mixed in a pony mixer.

Then the mix is transferred, a little at a time, to a three-roll mill. The rolls in the mill are geared so that the first roll turns at about one-third the speed of the second. The third roll turns about 10 times faster than the first roll.

The grinding action of the mill comes from the extremely close settings of the roll surfaces. The mixing-grinding effect occurs between the first and second roll. The third roll whips off a thin layer of thoroughly mixed dope from the second roll and is cleaned by a doctor blade. The mix flows over the doctor blade into a container.

Now this mix is added to calculated quantities of polyvinyl chloride resin, diluents, and solvents to produce a coating material of the proper viscosity for a particular job. This final mixing is done in 50-gal. drums with propeller mixers.

Bonding Coat Comes First

The secret of a good bond between nylon and polyvinyl chloride lies in producing a surface on the nylon to which the polyvinyl chloride resin will adhere. The material used, which was developed by the Sawyer research staff, is applied as a separate operation.

The sizing on the nylon warps is a factor in the final result because it must not interfere with the adhesive qualities of the bonding coat. Polyvinyl alcohol is the base for a satisfactory warp size for coated nylon fabrics.

Knife coaters are used to build up the coating on the prepared nylon fabric. The coaters are hooked up in range with a drying oven and a fusing oven, followed by an embossing calender and batcher.

Fabric from the let-off beam is led over tension bars and under a knife edge. The coating mix is ladled out onto the fabric as it moves through the range, and the knife spreads and controls the thickness of the coat.

The drying oven, which removes the volatile portion of the coating, is supplied with 5,000 cu. ft. per min. of air, heated to 240° F. and directed in counter flow to the cloth. Distribution through perforated plenums top and bottom gives very even distribution of hot air. Sawyer's engineers designed the coating range.

Fusing Turns the Trick

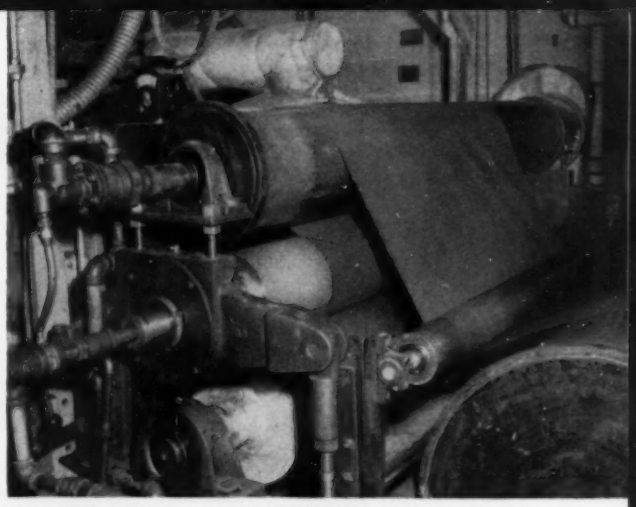
Up to this point the coating material is a granular mass with no film continuity. But a passage through the fusing chamber at 380 to 400° F. softens and melts the resin, and a smooth homogeneous product of resin backed with nylon is the result.

Each fabric, depending upon the end use and the weight required, has to be run through the coater several times. By building up light coats and fusing each one as applied, slight variables are canceled out and a perfectly coated fabric is made.

For various surface effects, the cloth is passed through an embossing machine, over a cooling can, and onto a batcher. Dull over-all effects, checks, stripes, and other patterns can be produced by inserting the proper engraved roll in the machine.

The combination of a strong textile fiber and an inert resin produces characteristics that are very desirable in protective coverings. The 7-oz. fabric has a tensile strength of 160 lbs. in the warp and 140 lbs. in the filling. The 16-oz. fabric is nearly twice as strong.

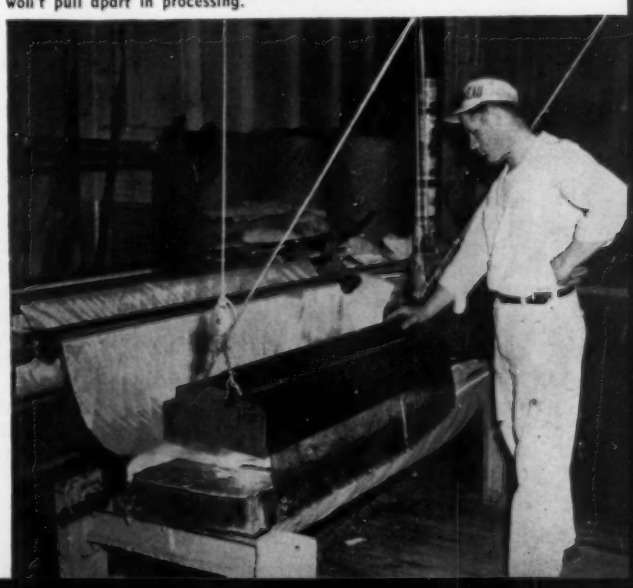
Add to that complete impermeability to water, gases, and lubricating oil; resistance to dilute sulfuric acid; and resistance to cracking at 30° F. below zero and it is not hard to see why this type of protective-covering material is finding a growing market.



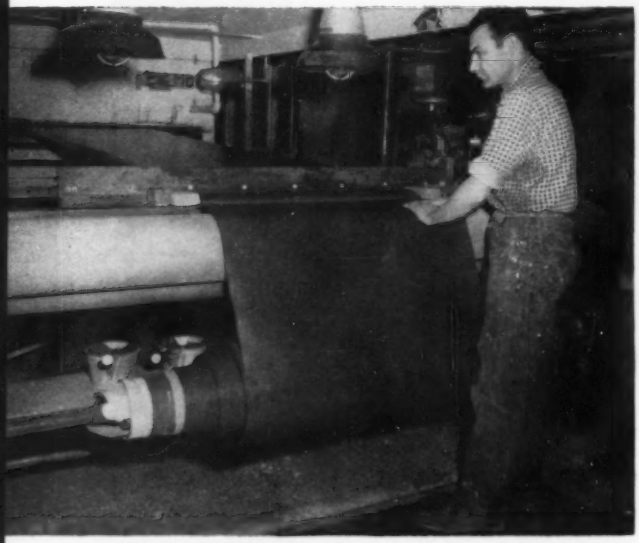
EMBOSSING is done as a part of the final run in the coating range. Over-all dull finishes or small conventional patterns may be pressed into the surface of the fabrics. A cooling can helps to set the patterns before the goods are batched.

LATEX CEMENT is spread over the butt seam and soaks through to a reinforcing strip of light duck.

INFRARED LAMPS weld the nylon and duck into a strong seam that won't pull apart in processing.

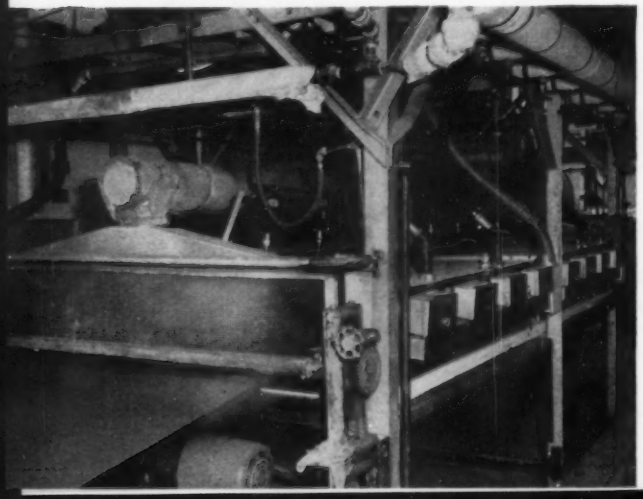


THREE-ROLL MILL is used to get complete mixing of pigments and plasticizers. The first two rolls are geared to produce a grinding action as the mix passes through a very closely set nip. Third roll skims a coat of mix off the second roll; and a doctor blade strips off the coating, which runs into a receiving drum.



COATING IS APPLIED by putting dope directly on the fabric. A knife edge scrapes off excess material, and the goods pass directly into the drying oven and then through the fusing oven. Coats are built up a little at a time to level out slight variations.

FUSING OVEN is equipped with resistance elements that heat circulated air to 380 to 400° F., enough to fuse the resin and bond it securely to the prepared fabric.



How Sawyer Produces Vinyl-Coated NYLON FABRICS

The Coated Fabrics Div. of H. M. Sawyer & Son Co., Watertown, Mass., is an old hand at coating cotton fabrics but was quick to see the advantages of combining nylon with the relatively new vinyl resins. Here's how it produces protective coverings that are—

- **Strong**
- **Light**
- **Durable**

By ROBERT W. PINAULT
Assistant Editor, TEXTILE WORLD

VINYL-COATED NYLON is probably the hottest item in the protective-covering field today. Combining strength and durability with light weight, these fabrics are being used to keep the weather off 12-ft. dinghies as well as 4-acre ball parks.

Filament nylon in a plain weave with a simple loop selvage is the foundation for the tarpaulins. H. M. Sawyer's Coated Fabrics Div. standardizes on two widths of goods in three weights: 2½, 4, and 5 oz. per sq. yd. The coated fabrics are built up to weights of 7, 10, 13.5, and 16 oz. per sq. yd.

Mixing the polyvinyl chloride, pigments, solvents, and plasticizer is a three-step process. First, the pigment and plasticizer are weighed out to meet laboratory formulas previously developed and mixed in a pony mixer.

Then the mix is transferred, a little at a time, to a three-roll mill. The rolls in the mill are geared so that the first roll turns at about one-third the speed of the second. The third roll turns about 10 times faster than the first roll.

The grinding action of the mill comes from the extremely close settings of the roll surfaces. The mixing-grinding effect occurs between the first and second roll. The third roll whips off a thin layer of thoroughly mixed dope from the second roll and is cleaned by a doctor blade. The mix flows over the doctor blade into a container.

Now this mix is added to calculated quantities of polyvinyl chloride resin, diluents, and solvents to produce a coating material of the proper viscosity for a particular job. This final mixing is done in 50-gal. drums with propeller mixers.

Bonding Coat Comes First

The secret of a good bond between nylon and polyvinyl chloride lies in producing a surface on the nylon to which the polyvinyl chloride resin will adhere. The material used, which was developed by the Sawyer research staff, is applied as a separate operation.

The sizing on the nylon warps is a factor in the final result because it must not interfere with the adhesive qualities of the bonding coat. Polyvinyl alcohol is the base for a satisfactory warp size for coated nylon fabrics.

Knife coaters are used to build up the coating on the prepared nylon fabric. The coaters are hooked up in range with a drying oven and a fusing oven, followed by an embossing calender and batcher.

Fabric from the let-off beam is led over tension bars and under a knife edge. The coating mix is ladled out onto the fabric as it moves through the range, and the knife spreads and controls the thickness of the coat.

The drying oven, which removes the volatile portion of the coating, is supplied with 5,000 cu. ft. per min. of air, heated to 240° F. and directed in counter flow to the cloth. Distribution through perforated plenums top and bottom gives very even distribution of hot air. Sawyer's engineers designed the coating range.

Fusing Turns the Trick

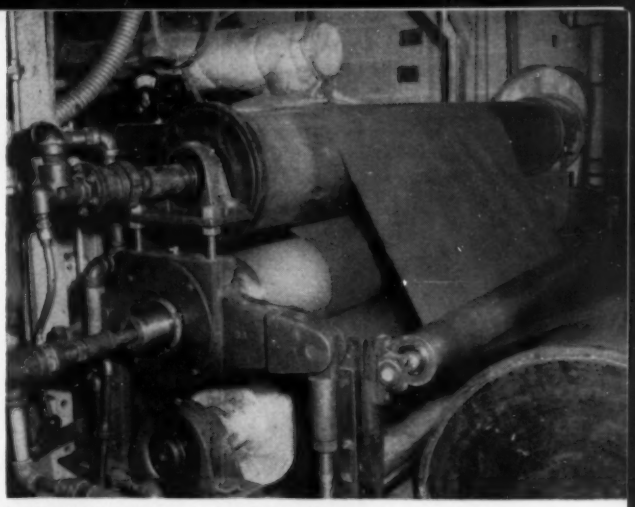
Up to this point the coating material is a granular mass with no film continuity. But a passage through the fusing chamber at 380 to 400° F. softens and melts the resin, and a smooth homogeneous product of resin backed with nylon is the result.

Each fabric, depending upon the end use and the weight required, has to be run through the coater several times. By building up light coats and fusing each one as applied, slight variables are canceled out and a perfectly coated fabric is made.

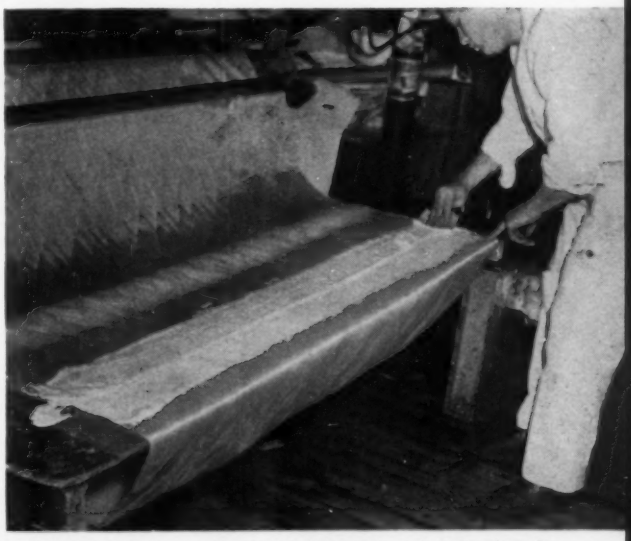
For various surface effects, the cloth is passed through an embossing machine, over a cooling can, and onto a batcher. Dull over-all effects, checks, stripes, and other patterns can be produced by inserting the proper engraved roll in the machine.

The combination of a strong textile fiber and an inert resin produces characteristics that are very desirable in protective coverings. The 7-oz. fabric has a tensile strength of 160 lbs. in the warp and 140 lbs. in the filling. The 16-oz. fabric is nearly twice as strong.

Add to that complete impermeability to water, gases, and lubricating oil; resistance to dilute sulfuric acid; and resistance to cracking at 30° F. below zero and it is not hard to see why this type of protective-covering material is finding a growing market.

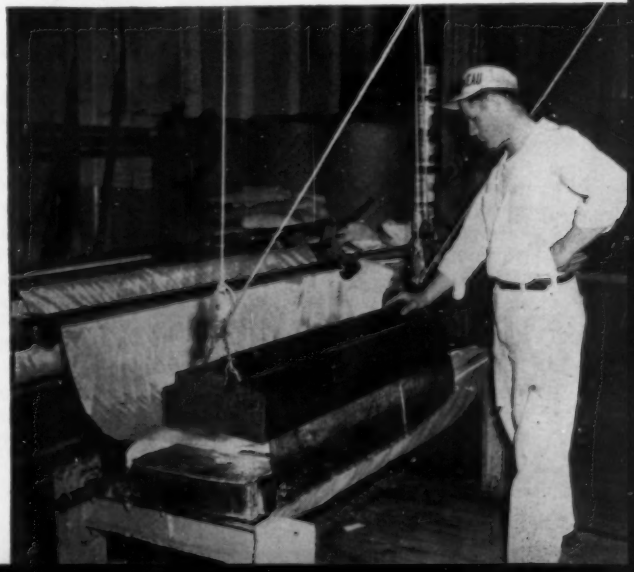


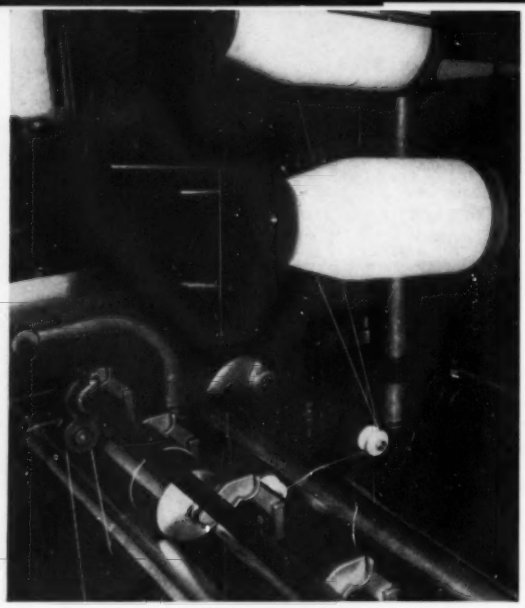
EMBOSSING is done as a part of the final run in the coating range. Over-all dull finishes or small conventional patterns may be pressed into the surface of the fabrics. A cooling can helps to set the patterns before the goods are batched.



LATEX CEMENT is spread over the butt seam and soaks through to a reinforcing strip of light duck.

INFRARED LAMPS weld the nylon and duck into a strong seam that won't pull apart in processing.





WET TWISTING is done with this special arrangement of attachments by merely passing the yarn over the wetting roll, and not through the trough. The front guide lets the yarn wrap around a great area of the bottom roll; in addition, the yarn forms a vertical path through the thread guide above the spindle.

Pointers To Reduce TWISTER Problems

A given twister frame, unlike a spinning frame, cannot be used to process a wide range of yarns. However, you can obtain reasonable flexibility by following these tips on—

- **Wet twisting**
- **Dry twisting**
- **Selecting rolls**
- **Threading yarn**

By A. L. LANDAU

THE PRESENT TREND toward mill flexibility is increasing the problems always found in twisting. The basic principles governing twisting are not fully appreciated by many mill men; and, as a result, they attempt to produce ply yarns on machines not suitable for the job. Then they're in trouble. Many of the woes now encountered could be avoided if mill men would brush up on twisting rudiments such as the effects and limitations of gauge, ring size, spindle-carrying capacity, and roll arrangement.

What Gauge To Use?

Frame gauge is mostly significant in determining the cost of the operation. There is a reasonable flexibility in the range of ply yarns that can be twisted on a given gauge of frame before the shortened doffing cycles create excessive cost factors. As ply yarn becomes coarser, the package builds up faster.

A coarse yarn is strong and can stand greater strains created by higher spindle speeds. Therefore spindle speeds are usually increased when a change is made to coarser ply yarns. Increased spindle speed in addition to the larger-diameter yarn fills up the package more quickly, and twisting costs climb excessively.

When the ring is too small, usually because of gauge limitations, the shortened doffing cycle makes it necessary to add doffers. The shortening of the doffing cycle also reduces the frame efficiency and the potential production per spindle per hour.

Gauge also affects the suitability of the machine for a given type of twisting. Twisters, unlike spinning frames, are not all built on the same chassis. Most machinery manufacturers use the same samsons, spindle rails, and other chassis components for all gauges of spinning frames, with the longitudinal members altered only to correspond with gauge specifications.

Twisters Do a Specific Job

But twisters are designed and manufactured to correspond more closely with the demands of the specific type of twisting to be performed. As a result, light twisters are built on a chassis similar to a spinning frame and heavy twisters are composed of massive skeleton members.

Twisters for light twisting or plying fine yarn are built in small gauges because the light yarn cannot withstand the strain of large rings. Heavy twisting, on the other hand, involves coarse yarn or cabled yarn where the great strength of the single yarn or the plies formed allows large rings and strong

tensions and pressures. For heavy twisting, the gauge must be sufficient for large rings and consequently the frames are massively constructed throughout.

Attempts to overextend the range of a twister often create problems. If too heavy twisting is attempted on a light frame, the increased yarn pull may be too great for the ring rail and its supporting pieces. Vibration and distortion of the rail cause uneven twisting and excessive wear of the frame.

On the other hand, a smaller ring is necessary when a large-gauge twister is used for light twisting. Small rings on large-gauge twisters are satisfactory from a strictly technical viewpoint, but the costs of the operation are excessive. The large spindle of the heavy twister requires a large bobbin, and consequently the large bobbin has to be used with the small ring. Therefore the package capacity is reduced.

Basically, however, this condition is similar to any other condition where a large, expensive machine has to do a job in competition with lighter, less-expensive machines and compete on a cost basis.

What Rolls Do You Need?

There are other technical factors that determine whether a proposed twisting operation is suitable for a given machine. The arrangement of the twisting rolls is vitally important. In spinning, the same drafting element may be used for any yarn number; but twister rolls are selected specifically for a given type of operation.

Twisters are built for either wet or dry twisting, and the rolls for each are different. Fundamentally, the desired appearance of the yarn determines whether wet or dry twisting should be used. A dry-twisted yarn has a fuzzier finish than one twisted wet, which has a smoother and cleaner appearance.

When yarns are twisted dry, the fibers that are floating practically loose on the yarn are thrown free. A larger group of fibers that are held at only one end are forced out by centrifugal force during the actual moment of twisting. These free ends project from the yarn to create a fuzzy effect.

This type of yarn is needed for some uses, such as when cover is needed on a woven fabric. But the projecting fibers add little, if any, strength to the final ply.

Wet-Twist for Smooth Yarns

Wet twisting, on the other hand, produces a thread or yarn that is smoother because of the absence of the projecting ends. This yarn is also stronger per given yarn number. When the yarn is twisted wet, the moisture on the fibers and in the body of the yarn causes the loose outer fibers and the projecting ends to adhere to the main portion of the yarn mass.

These loose fibers are then incorporated into the body of the yarn during the actual moment of twisting. Where this incorporation is carried out over most of the length of the individual fiber, the yarn increases in strength. The projecting ends are caught and twisted into the yarn to give the smoother appearance.

The wetting unit of a twister is a simple appliance and consists of a trough and immersion and wiper rolls. The trough usually holds only water, with perhaps an additive to prevent mildew. The water is supplied manually or by a small reservoir. This portion of a wet twister can be used, or the twister can be operated dry.

The number of rolls and the diameter of the rolls, together with the method of threading the yarn around the rolls, are important in determining the success of the twisting operation. A large number of different roll arrangements, combinations of different roll diameters, and special auxiliary attachments have been developed. All these special methods were developed to meet particular conditions. However, such special units are not flexible enough on other types of twisting.

Normally, for light twisting, a single line of top rolls is used with a single line of bottom rolls. The bottom rolls are usually 1½ ins. in diameter and are fitted with 2¼-in. top rolls. This arrangement is suitable for either wet or dry twisting. With this arrangement, a capstan or tension device is placed back of the roll stand for dry work and a trough and immersion roll are used for wet twisting.

Rolls for Heavy Twisting

For heavy twisting where extremely high tensions are present, the general practice is to use two lines of bottom rolls and one line of top rolls. Both bottom rolls are positively driven through gearing; the top roll is driven through frictional contact with the two bottom rolls.

The top roll rests between the two bottom lines and creates a definite nip at two points. This arrangement may be used for either wet or dry twisting; but the diameter of the rolls may vary and the method of threading the yarn will probably be altered.

For wet twisting, the bottom roll is usually 1½ ins. in diameter. For dry twisting, there is a tendency to use a larger roll. Top rolls vary from 1½ to 3 ins. in diameter for both wet and dry twisting; the exact size of either the top or bottom roll depends on the work, heavy or light, to be done.

In wet twisting, the yarn passes from the wetting unit through the two nips created by the top roll resting on the two bottom rolls; for example, in a straight line through the roll system.

In dry twisting, the yarn is taken from beneath the back roll, through the nip of the back bottom roll and the top roll, around the top roll, through the front nip, and from under the front roll through the thread guide. With this setup, a firm grip is obtained because the tension on the yarn, which is created by the pull from the creel on one side and the pull from the traveler on the other, pulls the top roll down positively.

For wet twisting, the two nips act as squeeze points to remove surplus liquid.

What Method of Threading?

The method of passing the yarn around the rolls is different on wet and dry twisting. In dry twisting, the yarn comes from the capstan, goes under the bottom roll, back through the nip, and forward over the top roll.

In wet twisting, the yarn moves from the immersion roll in the water trough over the top roll, back through the nip of the rolls, and to the thread guide from behind the bottom roll.

The threading methods for wet and dry twisting are designed to eliminate yarn slippage between the rolls. The method for dry twisting gives a larger area of contact around the circumference of the bottom roll and results in greater friction for a firmer grip.

Threading Controls Twist

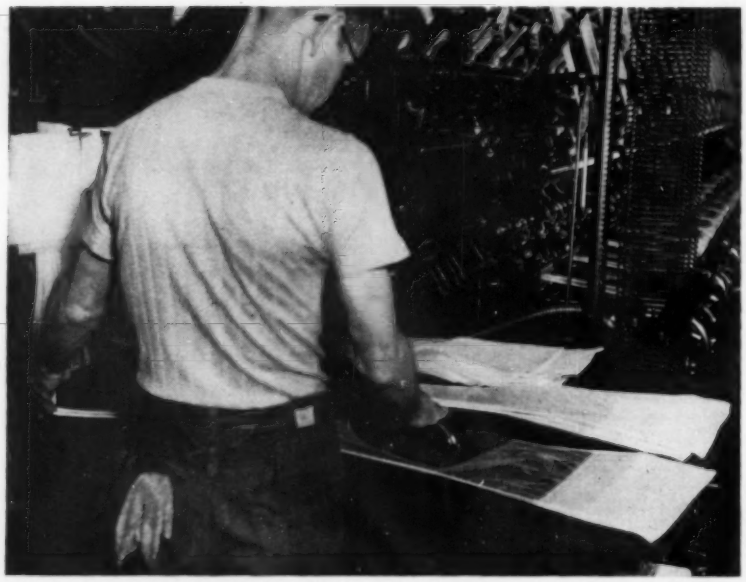
When the twist per inch of a yarn is very high, the twist travels from the thread guide to the top of the top roll. If extreme twist is put in, the twist reaches the back of the top roll. This condition is bad for two reasons: (1) the evenness of twist distribution is disturbed, and (2) the yarn tends to traverse across the length of the roll and slips off the end.

For this reason, the second method of threading is used. Here, the yarn is taken from beneath the bottom roll to the thread guide so that it is impossible for the twist to reach the top roll. The bottom roll is continuous in length, and the yarn cannot slip off the end. The tension on the yarn exerts pressure that increases the nip between the pair of rolls because a greater area of the top-roll circumference is now utilized. In addition, both the feed and delivery of the yarn to and from the top roll are in a direct downward pull.

How Woosley Keeps Hosiery PULL THREADS Below 4%

Among the techniques that this full-fashioned hosiery mill uses to battle the pull-thread problem are—

- **Correct training methods**
- **Handling stockings without bundling**
- **Extensive use of plastic trays**
- **Dyeing in knitted tubes**



KNITTERS inspect stockings with a glass iron and place them in a tray to be steam-set in the Lydon box.

METAL CHUTE on the seaming machine drops the stockings into the tray. Unseamed stockings are laid in the plastic trough.

By JAMES H. BLORE,
Associate Editor, TEXTILE WORLD

WOOSLEY KNITTING MILLS, Shelbyville, Tenn., has eight 32-section knitting machines. A large variety of styles, including stockings made from 12-den. nylon, are made on 51-, 60-, and 66-gauge machines. The stockings from the coarser-gauge machines tend to snag more than the finer-gauge stockings, but the mill constantly works to keep all pull threads below 4% of total production.

New workers, in addition to receiving an Ortho-Rater vision test, are given special instruction in preventing pull threads. Girls at Woosley are able to do several jobs. The girls who perform certain jobs well specialize on those jobs.

Knitters are supplied with hand lotion and emery boards to keep their hands in good condition. Their hands are checked if excessive pull threads are found in their production. Knitters who fish at weekends are sometimes the cause of excessive pull threads.

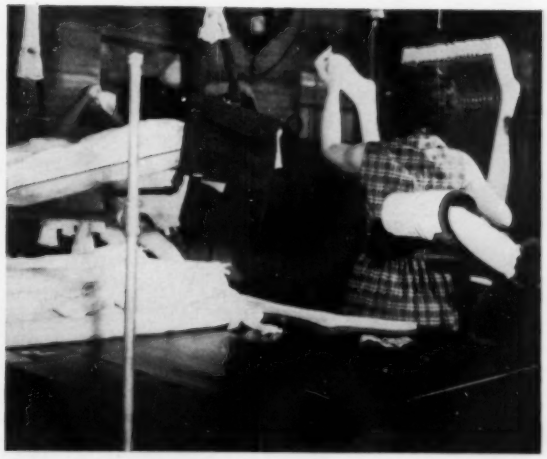
All stockings are inspected by the knitter on a black cloth-covered table at the end of each knitting machine. A glass iron is used to smooth the selvages so they can be checked.

Knitting machines are thoroughly cleaned every two weeks. A cleaning crew from outside comes to the mill to clean the lower part of the machine while the knitter cleans the machine from the sinker beds up. The cleaning job takes about 1 hr. for each machine.

After the knitter's inspection, the stockings are laid loosely in 1-doz. pairs in cloth-covered trays. Each dozen lies in alternate directions for easy counting. One shift's production is laid in each tray. The stockings are not tied.

The stockings are moved to a Lydon box in the trays, and the stitches are

INSPECTING was found to cause a lot of pull threads until an automatic machine was installed.



PREBOARDED STOCKINGS are folded and placed in the cotton tubes supported by the brass cylinder on the table.

DYEING is done in rotary machines with the tubes, which hold 3 doz. stockings, laid side by side.

DRYING is done in a hot-air chamber built in the finishing room. The metal racks hold up to 400 doz. stockings.

set while the goods remain in the trays.

The seamer removes each dozen from the tray after the Lydon-box treatment and places the dozen in a plastic trough on the front of her bench. After seaming, each stocking slides down a metal chute to another cloth-covered tray.

Inspecting Causes Pulls

The gray-inspecting operation was found to be a prolific source of pull threads, and several gadgets were tried before a form was invented that didn't cause excessive pulls. Finally, a Sotco Model 6,000 automatic inspecting machine was installed and pull threads have now been practically eliminated at this operation. The stockings are drawn through the hollow form without causing the stitches to rub against one another.

Gray inspectors do not work on piece work. Their production is about 165 doz. per shift, but they remove some small pull threads while the stockings are stretched on the form.

Stockings are drawn on the form directly from the tray. Each fault not repaired is marked with a colored crayon for mending.

The stockings are delivered to the preboarding department in 20-doz. lots in the trays and laid over plastic trays suspended over the preboarder's work table with the welts facing the operator.

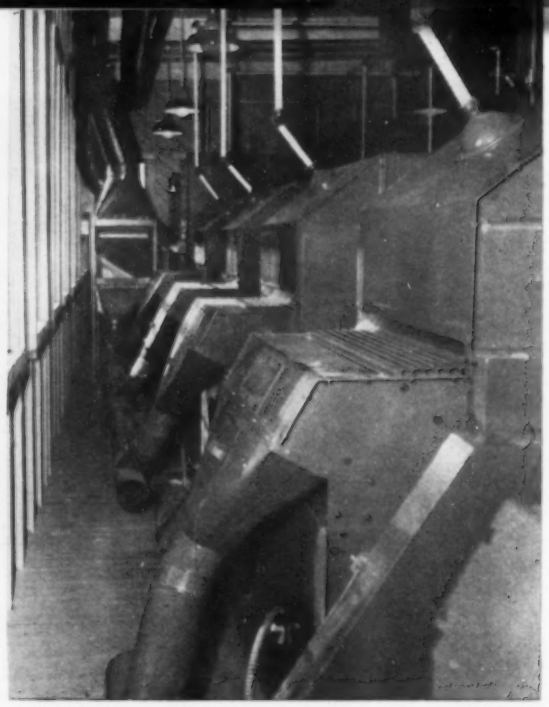
Paramount preboarders are used, and the movement of the stockings from the tray to the preboarding forms is cut to a minimum. Mirrors are fixed to each preboarder to help the operator to keep seams straight. The forms have a groove down the center foot and one side of the rear leg to keep the seams straight.

Preboarding forms were found to cause many pull threads, and the forms are cleaned each shift with Clena-form. The cleaning is done at the end of the shift when the forms are hot and the impurities on the form are soft.

Stitches that stick to the hot form also tend to cause pull threads, and the operator breaks these with her hands at the welt calf and ankle be-

CONTINUED ON PAGE 196

DUST AND TRASH are removed by suction pipes (arrow) from the No. 7 hoppers as the cotton is fed.



FEED PIPES from the No. 15 openers are arranged to handle the output from each group of three machines.

New OPENING ROOM Serves Two Highland Park Mills

A combination of old and new equipment laid out in three lines opens and cleans all the cotton used by Mill Nos. 1 and 3, Highland Park Mfg. Co., Charlotte, N. C. Advantages are—

- **Cleaner cotton**
- **Less chance of a complete shutdown**
- **One man operates the entire room**
- **Fire hazard is reduced**

By WILLIAM G. ASHMORE, Associate Editor, TEXTILE WORLD

THE OPENING AND PICKING DEPARTMENTS of Mill Nos. 1 and 3, Highland Park Mfg. Co., Charlotte, N. C., have been consolidated in Mill No. 3 to serve both plants.

The new opening room is clean and airy and has space to spare for three lines of equipment, two large presses, and 60 bales of cotton laid down. Feeding is from all 60 bales.

Two of the lines of equipment are used for cleaning natural cotton; the third line is for opening and blending dyed stock.

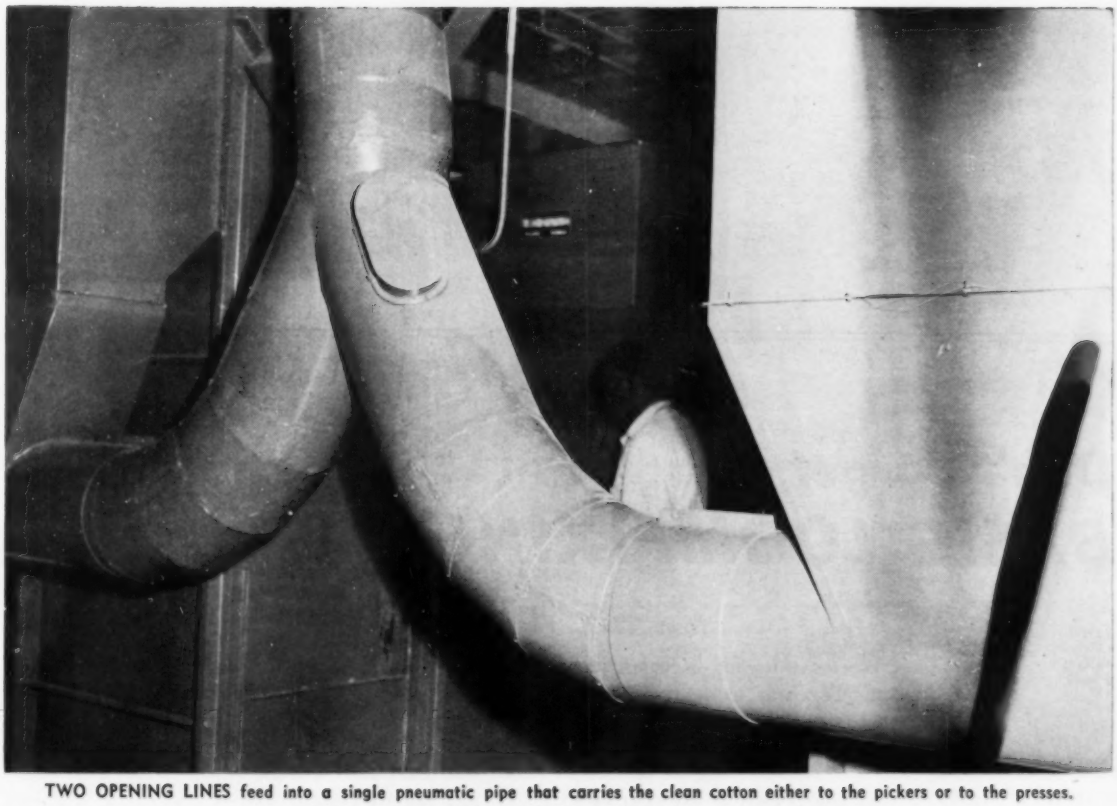
For the natural cotton, there are six Saco-Lowell No. 7 feeder hoppers attached to No. 15 openers, which feed two lines of opening equipment. Each line is fed by three hoppers through pneumatic pipes containing 20-in. vertical Eriez magnets equipped with floor supports. One 34-in. F-2 No. 3 feeder supplies waste evenly.

The first line has a new No. 11 condenser on a 34-in. base; the second line has an old No. 11 condenser equipped with a new 45° inlet mouth. Both lines have No. 11-over-12 lattice openers with new 45° inlet mouths and 45° inclined Superior cleaners.

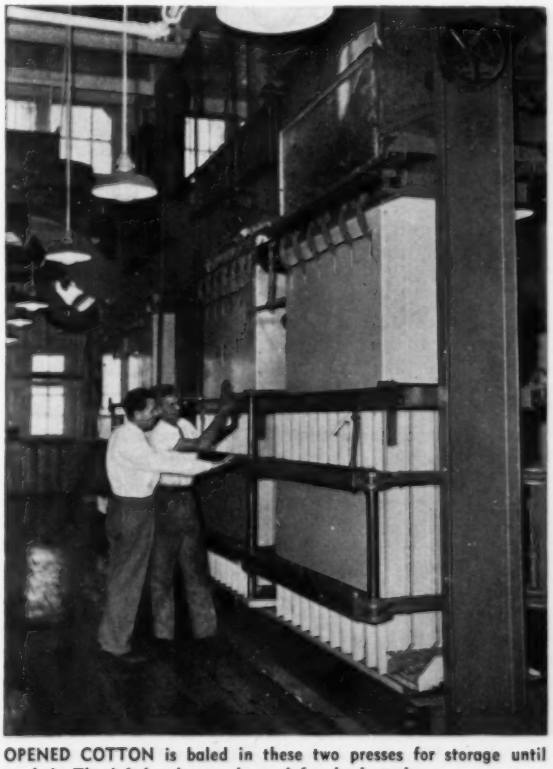
Stock from the two lines merge into a single pneumatic feed pipe that leads to the picker room or to the presses if desired. The double line processes 1,350 lbs. of cotton per hour and removes approximately 2% waste.

The third line of equipment, used exclusively for dyed stock, consists of five No. 7 vertical openers, a feed table, and two No. 12 openers in tandem. This unit is used to open and blend the dyed cotton.

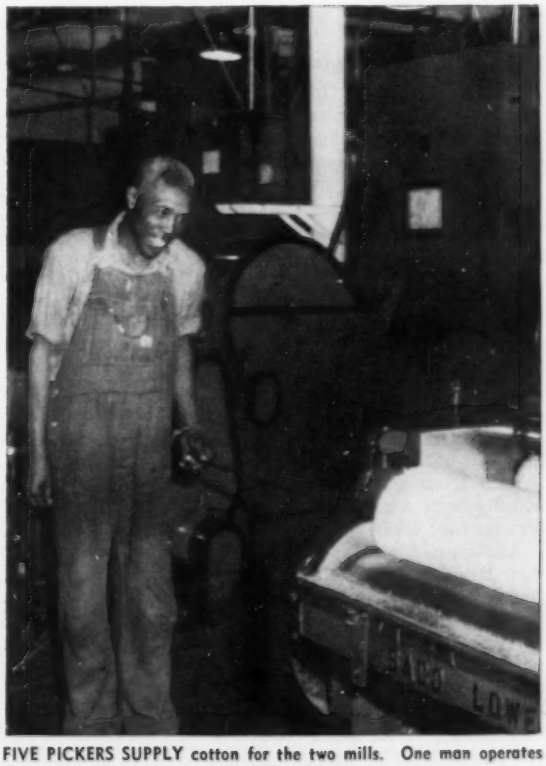
In the picker room, there are five Saco-Lowell F-4 two-process pickers, each producing a 61¼-yd., 12½-oz. lap every 8¾ mins. The breaker section of each picker has a two-blade beater running 945 rpm. Total beats are 60.8 per inch. Hourly production is 1,666 lbs. at 100% efficiency. Around 80% production supplies both mills.



TWO OPENING LINES feed into a single pneumatic pipe that carries the clean cotton either to the pickers or to the presses.



OPENED COTTON is baled in these two presses for storage until needed. The left-hand press is used for dyed stock.



FIVE PICKERS SUPPLY cotton for the two mills. One man operates the room and keeps it exceptionally clean.

Don't Forget
BASIC LOOMFIXING

The present trend in loomfixing methods is setting looms with gauges. And that's the best way to do the job. However, there's one great danger—loomfixers may forget how to fix looms.

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

For the past several years at practically every meeting of the Textile Operating Executives of Georgia, Alabama Textile Operating Executives, and Southern Textile Association, this question has been asked: "Do your loomfixers use gauges to fix looms?" The answer to this question is "Yes" in 9 out of 10 mills. Research by Textile World editors in dozens of mill visits also shows that loomfixers at virtually all mills use gauges to set their looms.

Many gauges are made by the major loom manufacturers, and other gauges are made in mill machine shops. The gauges are being used on most loom motions on all modern looms, and several are being used on modernized Draper E-model looms.

The trend of using gauges is a good one. Mill records show that production and cloth quality are gradually increasing. But there were a lot of advantages to the old-time rule-of-thumb loomfixing.

Both loomfixers and second hands knew what to do when fabrics were changed from one style to another because they knew basic loomfixing.

Any good loom man will tell you that gauges have their limitations. A picking-motion gauge for the picker-stick power and stroke settings, for example, has to be varied by the weight of the fabric construction.

A great danger is present when young loomfixers are taught to fix looms by gauges alone and are not given basic loomfixer training. They usually know what to do, but they often don't know why they do it. This danger may become severe when old-line loom men retire.

Fully 90% of all loom troubles develop at the picking motion or in boxing the shuttle. Therefore it is necessary for every loomfixer to have a working knowledge of these loom parts in addition to knowing how to set them with gauges.

Gauges Just Lend Accuracy

All looms pick when the crankshaft is at approximately top center. Gauges merely determine the accuracy of the top-center position and govern the picking-motion parts for the correct timing.

Let's look at the Draper Series X looms, for instance. On X-2, X, XK, XD, XP, and XL looms, the time of the pick is determined by the distance of the back box-plate surface to the back of the front horn of the loomside. The distance varies from 6 to 8 ins., depending on the type of loom.

The settings of the pick arm, long lug strap, and power strap have three functions: (1) to give enough power to drive the shuttle across the lay, (2) to start the shuttle moving at the correct time in relation to the warp shed, and (3) to get the shuttle completely through the shed while the warp shed is open.

The multiple gauge, or the series of gauges, merely control the picking motion for these three functions. The trouble starts when a lightweight fabric, for example, is changed to a heavyweight fabric. Then you may need more picker-stick power and may also need to retime the harnesses.

Another trouble source is in changing from a broadcloth fabric set up to give a good cover to a fabric that has a ribbed construction. Here you have changes in warp-line settings that throw the whole picking motion out of kilter. And even though you correct the trouble without read-

justing the picking-motion settings, you have to know the basis of the picking action to set the warp line to the picking motion for best weaving results.

Here's How Old-Timers Do It

Here's the general way the old-time loomfixer sets a picking motion, and he knows why he sets it that way:

1. Set the warp shed to clear the shuttle sufficiently, set the warp to the race plate, and set the warp tension for the temples to hold the cloth firmly.

2. Set the picker-stick stroke and power strap to throw the shuttle through the shed with a strong but gentle pick. The short lug clears the pick arm only $\frac{1}{8}$ in., or just enough to prevent binding. On average settings, the long lug clears the back of the power strap about $\frac{1}{2}$ in. and therefore the lug does not interfere with shuttle boxing.

These settings give approximately the same settings you get with gauges. But loomfixers should know why they make each setting. If the basic knowledge is combined with accurate gauge settings, there is little variation between looms set up by different loomfixers.

Setting the shuttle boxes is also done with gauges now. The function of the binders and front box plates is to guide the shuttle into and out of the shuttle boxes. If box parts, checkstraps, and the picking motion are set correctly, the binders and front box plates don't do a great amount of braking the shuttle.

For best results, the shuttle is released and received at about the end of the picker-stick stroke. Any further holding action kills the picking power. But the binder must hold the shuttle firmly in position to the end of the pick so that the shuttle will be thrown true.

For true shuttle flight, the front box plate and binder also have to be set so that the shuttle spur is in the center of the picker-stick slot in the lay end.

All gauge settings for correct shuttle boxing, starting with the protector rod and continuing through the front box plate, are made with the basic shuttle-box functions in mind.

It's Skill That Counts

Setting checkstraps to box shuttles closely depends almost entirely on the skill of the loomfixer. However, a few mills are experimenting with setting the tension on checkstraps and parallel springs with hand scales. The scale settings are particularly effective on endless checkstraps.

Four general settings are made to adjust slotted checkstraps:

1. Place the bolt in the center of the shuttle check.

2. With the picker stick against the lay-end strap, set the checkstrap so it clears the back of the picker stick $\frac{1}{2}$ in. With this setting, there is a clearance of about $1\frac{1}{2}$ ins. between the front of the picker stick and the checkstrap when the picker stick is at the end of its forward stroke.

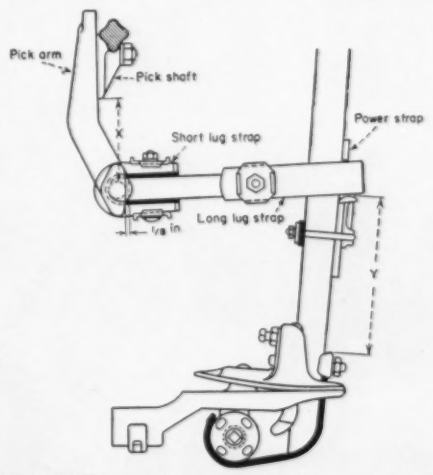
3. Move the adjustable friction in or out to check the shuttle gently.

4. Set the spring stud to the correct tension to pull the picker stick back quickly. But the picker stick must not pull the checkstrap through the adjustable friction.

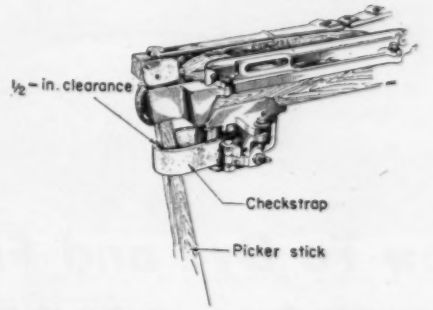
The last setting necessary for correct shuttle flight is paralleling pickers. From the setting in boxing the shuttle, the shuttle spur is already in the center of the picker-stick slot in the lay end. Two other settings are necessary:

1. With the shuttle flat on the lay end and the picker stick against the lay-end strap, set the hole in the picker to the shuttle spur.

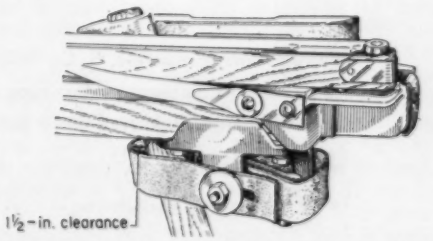
2. Pull the picker stick forward to $\frac{3}{4}$ in. beyond the end of the stroke, and set the picker to raise the shuttle $\frac{1}{32}$ in. off the lay end. Repeat the two adjustments.



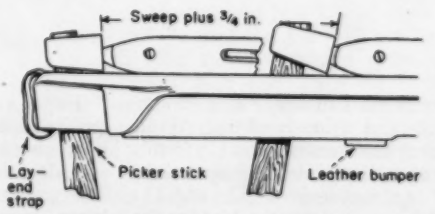
PICKING MOTION is set by gauges at *X* and *Y*. Old loomfixers used rule-of-thumb settings that included a standard ½-in. clearance between the power strap and long lug.



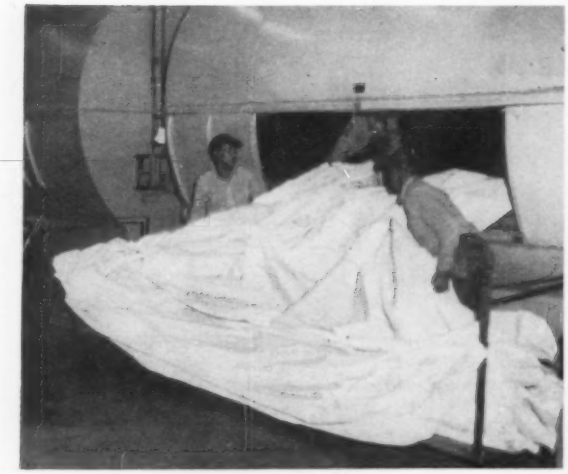
CHECKSTRAP SETTINGS are still basically the same as those on the older Model-E and Model-L looms. The most important setting is the ½-in. clearance at the picker stick.



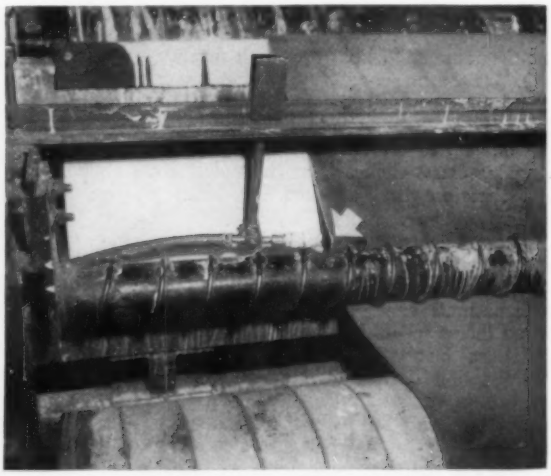
CHECKSTRAP LENGTH is determined by a clearance of 1½ ins. at the end of the picker-stick stroke. This clearance protects the checkstrap against breakage.



PARALLELING PICKERS is the final setting in assuring true shuttle flight. The picker is paralleled at the back first and is then reparalleled ¾ in. past the end of the stroke.



WET-OUT RUGS are loaded into large tumbler dryers. As the cylinder revolves, the rugs flop about and each fiber in the pile separates to give an excellent cover to the face of the rug.



AIR BLAST on the selvage (arrow) keeps the edges free of rubber backing as the room-size rugs move along through the coating and drying range.

How To Dye and Finish COTTON RUGS

Belrug Mills, Greenville, S. C., finishes cut-pile rugs and dyes and finishes loop-pile rugs made at its plant. Most rugs in both styles get a latex backing. The cut-pile rugs are made from dyed yarn, and the finishing process produces—

- **A thick and bloomy pile**
- **A thoroughly shrunk rug**

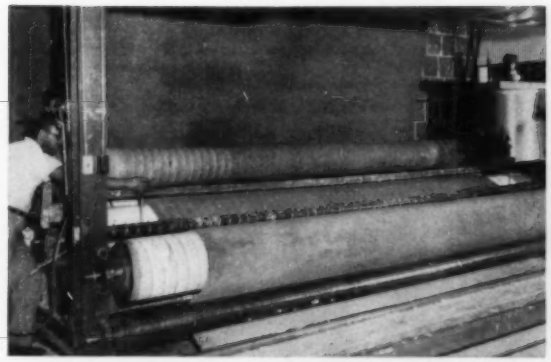
By ROBERT W. PINAULT, Assistant Editor, TEXTILE WORLD

THE DENSE AND LOFTY PILE of cotton- and nylon-faced rugs made by Belrug at Greenville, S. C., is the result of a simple finishing operation. These rugs, woven in 9-, 12-, and 15-ft. widths, come from the loom ready to finish, the pile face being formed of yarns that were made from dyed raw stock.

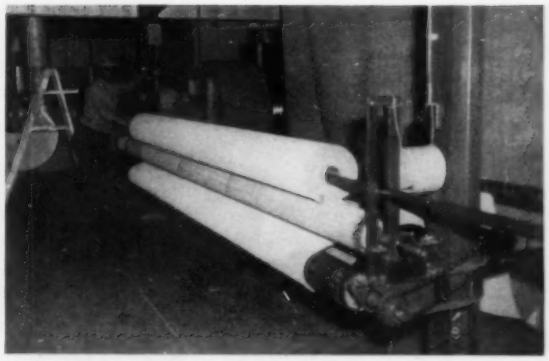
To get a dense, even cover with the quality called bloom in this business, it is necessary to wet out the rugs and dry them in a tumbler dryer. The constant flopping about of the heavy rugs while they are being tumbled in the dryer produces the desired effect.

The rugs—called yardage goods—are put through a Birch Bros. pad consisting of two sets of pneumatically loaded squeeze rolls. The rugs pass through a cold-water bath and into the first set of squeeze rolls and then are wet out again and get a final squeeze through a heavier nip.

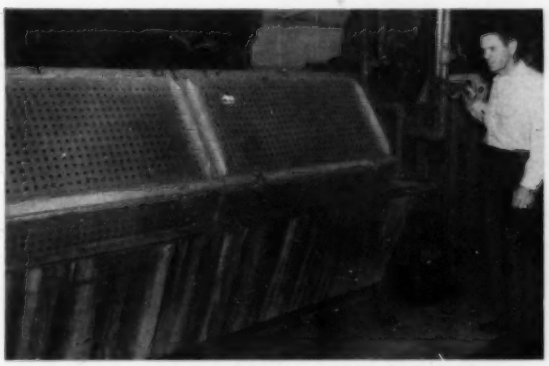
The pad delivers the rugs onto a truck on which they are transported



COATING AND DRYING the rugs completes the finishing operation. Dryer mounted overhead leaves floor space open for placement of carpets to be backed.



CARPET BATCHER built at the mill is geared to pick up carpets from the dryer with a minimum of tension. Paper cores upon which carpets wind are reused many times



HEXAGONAL DRUMS in scatter-rug dyeing machines help to give better tumbling action during dyeing. R. B. Taylor, boss dyer, is checking liquor level in a new dyebath.

MOVING SPRAY travels across the conveyor on which scatter rugs are placed, edges tucked in to avoid spotting. A bank of infrared lamps dries the coating.

to huge tumbler dryers. Loading the rugs—they may be 15x30 ft.—takes one man in the tumbler and two on the outside to stuff the bulky rugs into the machine.

Each tumbler is equipped with a complete system for heating air and forcing it into the tumbler.

Drying time will depend a good deal on whether the rug has a cotton or nylon pile and on the load in the dryer. Cotton-pile rugs will average 3 hrs. per load and nylon-pile rugs somewhat less.

The wetting out and drying in this way also shrink the rugs so that Belrug can guarantee that they won't shrink more than 1% in service.

Backing Adds Weight

Although these rugs are woven and do not need a rubber backing to stabilize the pile, a certain amount of stiffness and weight are desirable in some styles.

Belrug uses a coating machine of very simple design that was built in its shops. The rugs are passed over a roll that turns in a trough containing a latex mixture. Only one doctor blade is used, and that removes excess latex from the back of the fabric.

The rugs pass directly to a dryer mounted over the coater and extending back over the working area where rugs are assembled for coating. This arrangement saves space. The rugs are supported on rollers in the dryer and make three passes through the dryer before delivery to a batching machine hooked up in range. Dryer temperature is set at 275° F. to remove moisture and cure the latex. Production is about 12 ft. per min.

Scatter Rugs Dyed at Plant

Belrug weaves a variety of cotton scatter rugs with a loop pile. These rugs are dyed at the plant in laundry-type machines adapted to the purpose.

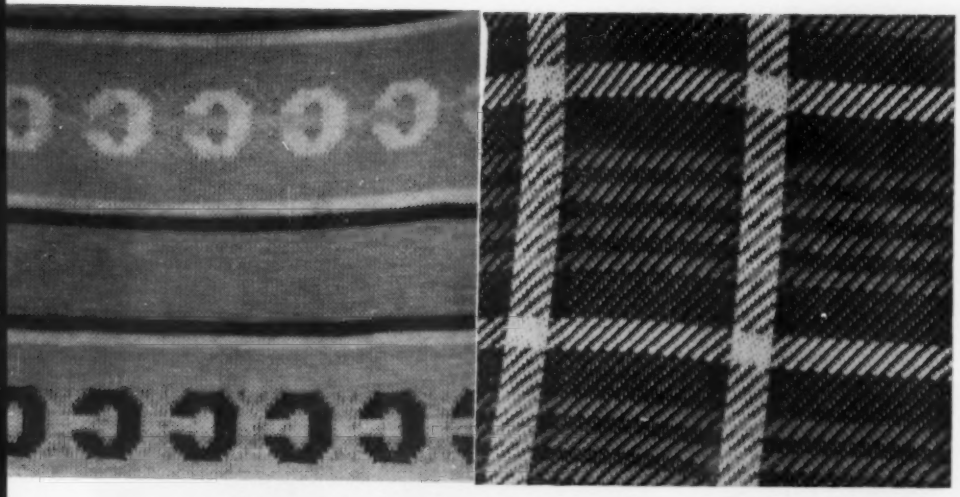
Scouring and dyeing proceed in one bath as follows:

Wetting agents and a detergent are added to cold water in the machine, and the required dye is boiled up in a separate container and added to the bath. The dry rugs are put in the drum, which revolves in the dyebath. Steam is turned on, and the bath is brought to 180 to 210° F. in 15 mins. The drum is then put on the automatic reversal circuit, which changes the direction of rotation every 2 mins.

After 15 mins. at the boil, salt is added to the bath and a sample is taken 10 mins. later. If the shade checks, a 10-min. rinse is given in cold water and the load is ready for extracting and tumbler-drying.

These small rugs are sprayed with latex as they move slowly along on an endless belt. Operators place the rugs on the belt and tuck in the edges and ends so that the pile will not be hit by the spray. A single spray head travels back and forth on a track mounted a few inches over the rug conveyor belt.

The rugs move into a small oven in which are banks of infrared lamps that dry and cure the latex backing. The finish adds weight and also provides a nonskid surface, a desirable feature in scatter rugs that are used on well-waxed floors.



KNITTED FABRICS are made in up to 300 designs each season. Each design is made in four or more different color combinations.

KNITTED FABRICS Constantly Change At Carolina Corp.

• About 300 different patterns with four or more color combinations are worked out each season at this new South Carolina mill to give customers a wide range of knitted fabrics from automatic pattern-wheel machines

By **JAMES H. BLORE,** Associate Editor, TEXTILE WORLD

Part of Carolina Corp.'s new knitting mill at Jefferson, S. C., is equipped with 20 Supreme automatic pattern-wheel machines. The mill also has 100 Supreme M. J. machines and 50 rib machines of various types. The pattern-wheel machines are in a separate room from the main knitting room because dyed yarns are usually knitted.

To keep the pattern-wheel machines turning out new fabrics, one man devotes his time to drafting new patterns and color combinations. About 300 different patterns with more than four color combinations each are worked out each season from 50 basic colors recommended by the American Color Council.

The designs are aimed at the customer's individual requirements. Pastel colors predominate for girls' patterns, but stronger shades are used for boys' patterns.

Color trends change each year. Different colors are used for spring and fall shades.

Stripe widths generally graduate from large repeats for small children to 5-in. repeats for older children and chest stripes for adults' patterns.

Ideas are obtained from such sources as ties, tapestries, and magazines. No designs are copied from other knitted fabrics unless the customer requests it.

When an order is received for striped fabrics, the percentage of each color is calculated so that the correct quantity of yarn can be ordered. The color combinations are checked with the original samples. Each order takes about one month to process.

How Wheels Are Set Up

When the wheels are removed from the knitting machines to change the design, all jacks are removed from the wheels. The wheels are then cleaned with the air hose. The full complement of jacks is replaced in the wheel, and the unwanted jacks are removed according to the pattern.

This method has been found quicker than putting the jacks in according to the pattern. The method also reduces faulty work. One girl does this work, and she completes an average of 72 wheels each day. This girl also translates the design from the designer to a sheet for easy reading. On two-color designs, different-colored pencils denote whether the jacks stay in or come out.

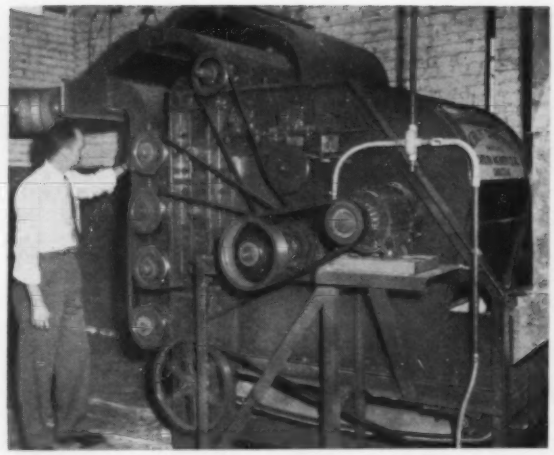
Wheels are stored in a cupboard until required. Each drawer in the cupboard contains a complete set of wheels for one machine. The wheels are stored on end in numerical order. The work sheet for setting up the machine is also kept in the drawer along with swatches of the fabric.

The swatches, which are on a card and contained in a cellophane envelope, are placed in a large envelope along with the master ticket and work sheet. The large envelope is clipped to the knitting-machine guard for easy reference while the machine is set up and the order is knitted.

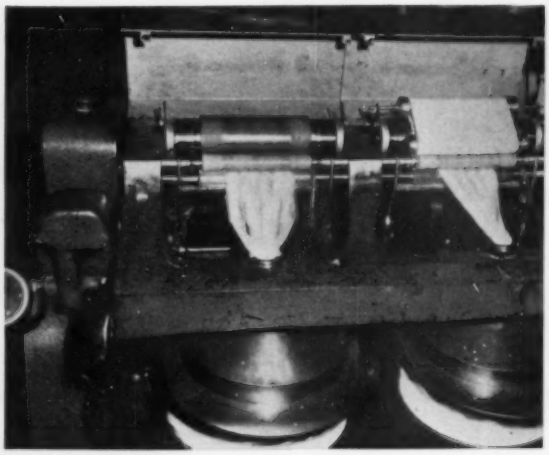
PATTERN WHEELS are cleaned with the air hose after all jacks have been removed. The wheels are filled with jacks, and selected jacks are removed.

FABRIC SWATCH is kept with a complete set of pattern wheels in a drawer with the work sheet for quick identification of fabrics.

STRIPES in the fabric are checked by the knitter at regular intervals. A stitch count is taken at the completion of each roll of fabric.



SRRL CLEANER in the opening line operates at 3,000 lbs. per hr. A No. 11-over-12 cleaner follows.



TWO-OVER-THREE DRAWING, running 175 rpm., produces 27 lbs per hr. Note the large top roll.

How One Cotton Mill Reorganized CARDING and SPINNING

This Southern gray-goods mill found it desirable to switch to finer numbers. By rearranging existing equipment and installing new large-package roving, the mill—

- **Reduced number of cotton mixes required**
- **Increased yarn production and quality**
- **Decreased range of yarn numbers**
- **Liberated floor space for weaving**

By **WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD

A LARGE SOUTHERN COTTON MILL, which formerly manufactured a wide variety of relatively fine goods, found that over the years it had drifted into the manufacture of much heavier fabrics because of shifting markets.

The management studied the situation and decided to specialize in the production of goods best suited to the mill's capabilities. Fabrics selected were diaper cloths, soft-filled sheeting, poplin, and drapery fabrics.

The next step was to reorganize the mill mechanically. This action called for the installation of a substantial quantity of new equipment and rearrangement of old machinery. A number of advantages immediately became apparent:

1. Higher production, lower costs, and better-quality goods improved the mill's market and financial position.

2. Cotton mixes were reduced from six to two, and staple lengths were standardized at 1 and 1⅛ ins.

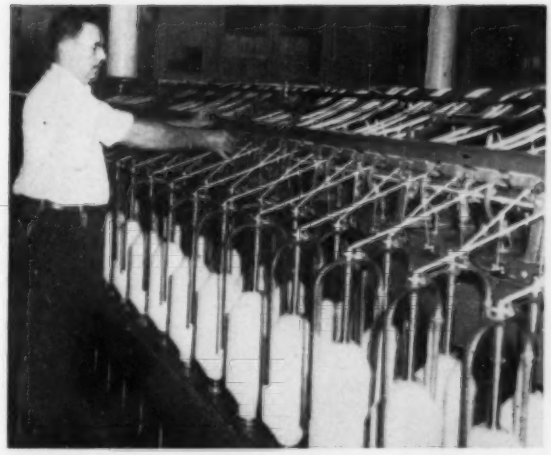
3. Yarn range was narrowed to include only 12s to 30s warp and 5s to 44s filling.

4. Floor space released by the installation of large-package roving and the substitution of narrow looms for wide looms permitted the mill to add 228 more looms.

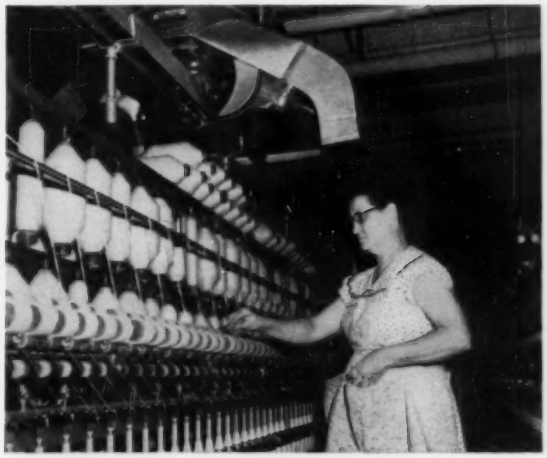
How the Mill Operates

Here's how the mill operates since it was reorganized:

In the opening room, 25 bales of cotton are laid down, and feeding is from all of them. There are four lines of opening equipment. Each line consists of six F7 hoppers, a Superior



NEW 12x6½ ROVING released floor space now occupied by looms. Hank rovings range from 1.50 to 0.90



FRAME CLEANERS are being installed in the spinning room. Open creels are being installed on 41 frames.

cleaner, a Carolina SRRL cleaner, and a No. 11-over-12 cleaner. The SRRL cleaner operates at 3,000 lbs. per hr.

Each line of opening equipment feeds to three single-process pickers that produce 420 lbs. per hr. each. The 14¾-oz. laps are 57 yds. long and weigh 52½ lbs. The pickers have one two-blade beater and one Kirschner beater.

In the card room, there are 306 Saco-Lowell and Whitin cards producing a 56-grain sliver at 13½ lbs. per hr. Speeds and settings are basically conventional. For example, cylinder speed is 165 rpm., lickerin 420 ft. per min., and flats 3 ins. per min. Typical settings are flats to cylinder 0.008 in., doffer to cylinder 0.007 in., lickerin to cylinder 0.007 in., and plate to lickerin 0.010 in.

Recently a conveyor system was installed to transport laps from the picker room to the card room.

There are 440 deliveries of Whitin, Saco-Lowell, Ideal, and Tritex breaker and finisher drawing. Most of the drawing is three-over-four, eight-ends-up, except for a Tritex frame that is two-over-three.

Both breaker and finisher drawing run 175 ft. per min. and produce a 56-grain sliver. Production is 27 lbs. per hr. per delivery. Cans are 14x36.

The roving department, where most of the changes were made, is now equipped with 32 10x5 Whitin and Saco-Lowell frames, two 12x6 Saco-Lowell FS3 frames, and six Whitin 12x6½ long-draft frames. Hank rovings now produced are 1.50, 1.35, 1.10, and 0.90.

Cradle Has Two Aprons

The 12x6½ frames have a three-roll drafting system with a two-apron cradle between the front and second line of rolls. Front bottom-roll diameter is 1⅛ ins.; the Whitin-Climax front top rolls have a diameter of 1¼ ins. Two pumps are used with the Bijur lubricating system, and there are Alemite fittings for greasing the front bottom-roll bearings. These frames are used to make 1.10-hk. roving for spinning 25s to 30s warp.

Front-roll speed is 159 rpm., flyer speed 730 rpm., production 1.24 lbs. per spindle hour, draft 7.22, twist multiplier 1.28, time to fill bobbin 3.55 hrs., roving on bobbin 54 oz., and efficiency 85%.

The 10x5 frames are primarily used to produce 0.90-hk. roving for filling. Front-roll speed is 175 rpm.; production is 1.36 lbs. per spindle hour.

Cleaning schedule for the 12x6½ frames running 144 hrs. per week is as follows: Pick top rolls daily; clean flyers and top and bottom clearers once each doff; clean gears three times each week; scour frame once every six months.

The lubrication schedule for these frames calls for greasing the front bottom rolls and oiling the middle and back bottom rolls once every two weeks; top middle and back rolls are oiled once every 10 days.

75,000 Spindles in Place

The spinning room has over 75,000 spindles. There are 127 Whitin warp frames spinning 26s and 30s. Of these frames, 77 have 240 spindles, 4-in. gauge, 2-in rings, and 8-in. traverse. The other 50 frames have 300 spindles, 3¼-in. gauge, 2-in. rings, and 8-in. traverse.

On 26s warp, front-roll speed is 133 rpm., twist multiplier 4.65, and draft 23.64.

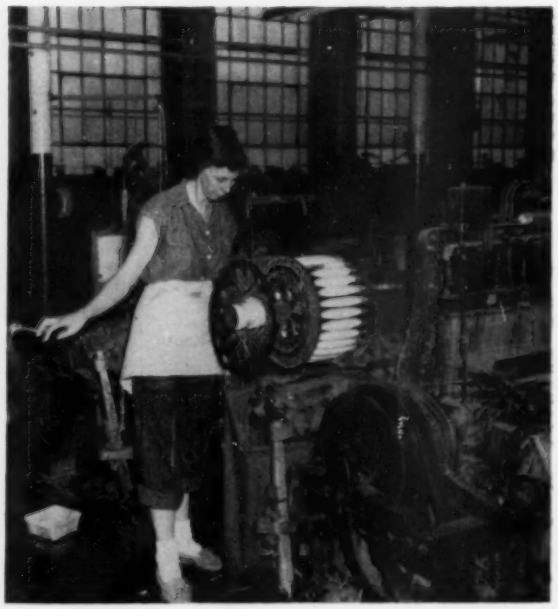
There are 136 frames spinning filling yarns. Gauges range from 3 to 3½ ins., rings are 1½ ins. in diameter, and quills are 8¾ ins. long. The frames, a mixture of Whitin, Saco-Lowell, Fales & Jenks, and Roberts change-over, all have long-draft systems.

On 12.5s filling, front-roll speed is 175 rpm., twist multiplier 3.26, and draft 13.89. On 44s filling, front-roll speed is 110 rpm., twist multiplier 3.90, and draft 29.5.

All warp frames have Pneumafil, and 41 frames are equipped with Parks-Cramer multiple-nozzle traveling frame-and-ceiling cleaners; 58 additional frames will be similarly equipped as soon as practical. Roberts open creels have been installed on 41 frames, and the mill may open up existing solid creels to make cleaning easier.

Filling frames are blown down by hand every 8 hrs.; warp frames are blown down every 24 hrs. except where frame cleaners are used. Frames equipped with mechanical cleaners are blown down every 144 hrs.; top rolls are picked up every 24 hrs.; bottom rolls are picked every 48 hrs. Steel rolls are cleaned every six months, at which time frames are aligned, leveled, and plumbed.

FORTY-FIVE LOOMS are tended by each weaver. Constant patrolling of the warp aisles keeps lint from accumulating between the drop wires.



BATTERYHANDS fill 72 batteries each. The Paddock trucks are replenished from boxes placed at central locations in the weave room.

Specializing Pays Off In Weaving Quality JEANS

• LaFayette Mills, Inc., LaFayette, Ga., demonstrates the advantages of concentrating on the production of one type of fabric. Its basic product, cotton jeans, is a hard-to-weave cloth requiring close loom settings and experienced personnel.

By **WILMER C. WESTBROOK,** Assistant Editor, TEXTILE WORLD

THE BASIC PRODUCT of LaFayette Mills, Inc., LaFayette, Ga., is cotton jeans, although a few of the looms are weaving related fabrics. Construction of the jeans is 39 ins., 96x64, 2.85 yds. per lb., from 23s warp and 25s filling. Loom efficiency is about 90%, and off-quality goods comprise less than 5% of the total production.

Jeans is a sensitive fabric during weaving, and the temperature and humidity must be closely controlled. A temperature of 80° F. and relative humidity of 85% are maintained at LaFayette.

Close Settings Needed

The warps are heavily sized, but the close construction of jeans requires precise loom settings to keep fiber shedding to a minimum. The whiproll and take-up roll are set for a rather high warp line. The bottom line of shed is pulled down close to the shuttle race, and the shed is as small as possible consistent with easy shuttle passage.

Heavy shedding of the warp and high relative humidity make it necessary to have constant vibration of the whiproll and agitation of the drop wires to prevent rolls of lint from collecting between the banks of drop wires. Tangles and drawbacks caused by balls of lint forming on the warp ends comprise a large proportion of the total defects found in jeans.

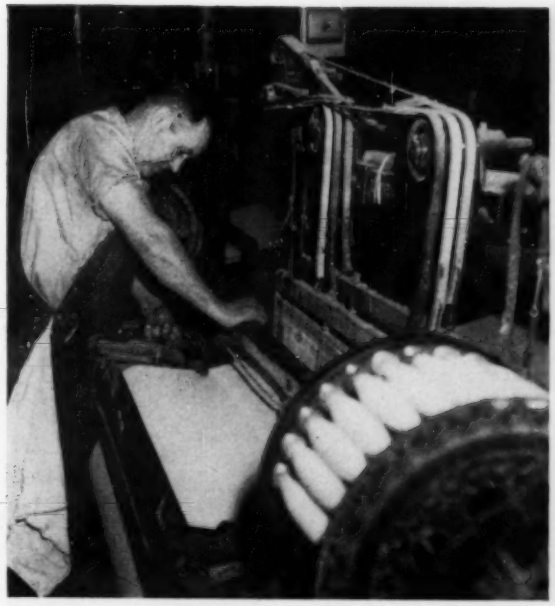
The shuttles, shuttle boxes, and pick motion are kept in good condition; and correct settings and timings are maintained.

Warps Run Seven Days

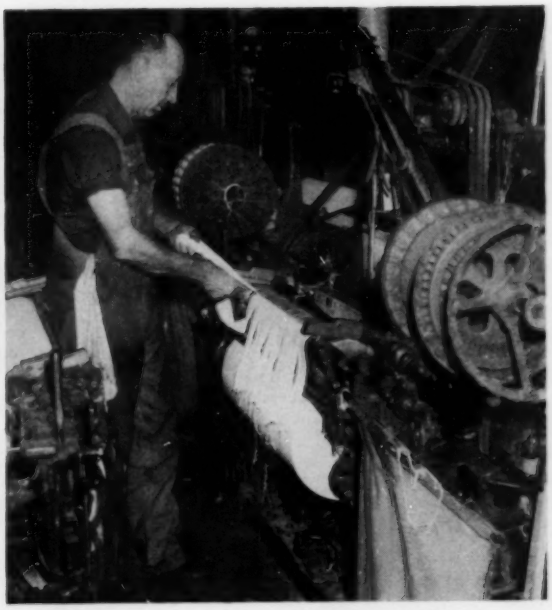
Each loomfixer at LaFayette has 80 looms. In addition to routine repair and maintenance work, the loomfixer also ties on new warps on his section. Each warp runs about 7 days or 168 hrs. operating time. Each loom is thoroughly cleaned, inspected, and lubricated at warp-out, with preventive maintenance work also being done at this time.

The weavers have 45 looms each, and the batteryhand jobload is 72 looms. The batteryhands use Paddock-type battery-filler trucks and replenish the truck hoppers from boxes located at strategic points about the room.

In addition to every loom being cleaned at warp-out, they are divided between the three shifts and each loom is



E-MODEL LOOMS operate at 165 ppm. Each loomfixer has 80 looms on his section to repair and maintain.



LOOMFIXER also ties on new warps. Each beam contains about 700 yds. of 23s yarn and will run about seven days.

cleaned with compressed air every 24 hrs. The main bearings, cams, and gears of the looms are lubricated every day.

Floors Are Sanded

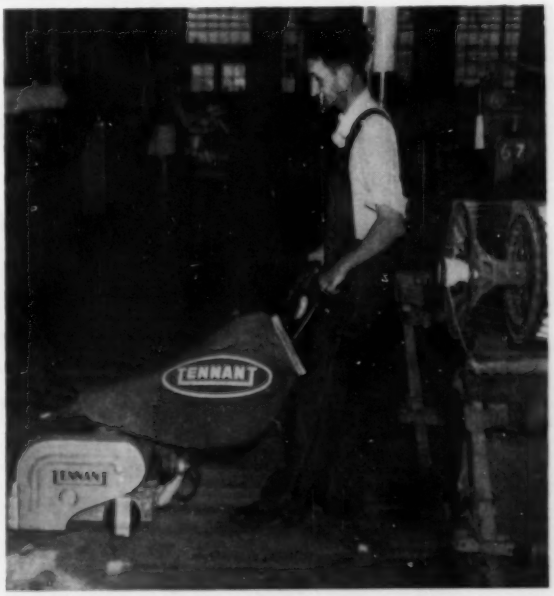
The floor of the main weave room is being sanded, sealed, and varnished. The Tennant system of floor maintenance is used.

Of the 400 looms in the mill, 327 are 40-in. Draper Model E looms. These looms are belt-driven at a speed of 165 ppm. There are 73 E-Model looms, rebuilt by Bahan, that are equipped with 1-hp. motors. These are 44½-in. looms and have Brown Spring tops, Stafford thread-cutters, midget feelers, and sliding feeler-bar warp stop motions.

The 40-in. looms have Lacey top motion, midget feelers, single side-fork filling mechanism, and oscillating-rod warp stop motions.

In addition to the main weave room on the ground floor, there are a few looms in a second-floor room and 80 looms in the basement. The basement weave room has a concrete floor, and the looms are mounted on felt pads.

The looms in the basement and those in the main weave room on the floor above are driven from the same line shafts. The motors and shafts are mounted near the ceiling of the basement room with belts passing through openings in the floor to the looms in the main room.



FLOOR of the main weave room is being sanded and varnished. The Tennant system of floor maintenance is being used.

No Labor Turnover

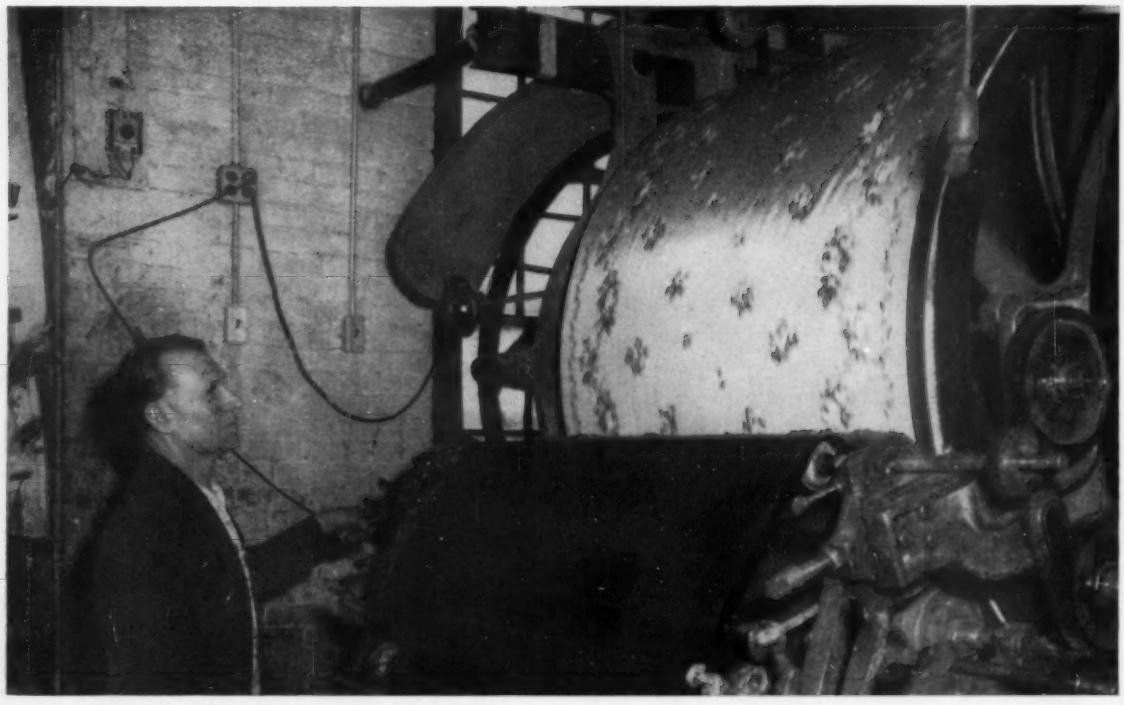
When asked about employment and training practices, T. C. Giles, superintendent, said:

"As you know, the mill has only been in operation for about six months after an extended shutdown. We had so many former employees and experienced operators from other mills to apply for jobs that training has been no problem.

"There is a surplus of available experienced textile labor in this vicinity. Some are unemployed, but most of them are working in other mills or other industries and want to make a change.

"We've had very few people to quit since we resumed operation. In fact, our labor turnover is so small we've quit taking applications for jobs because we can't predict any openings for new employees in the near future."

[Readers of "The LaFayette Story" in the January, 1956, issue of TEXTILE WORLD *will be interested in knowing that this mill has more than fulfilled the hopes of its backers. In full three-shift, six-days-a-week operation and producing quality fabrics in quantity, the "Little Mill," as it is affectionately called, is once again a dominant factor in the economy of LaFayette and surrounding area.—Editor.]*



ANDREW PIRACCI, boss printer, checks an acetate faille fabric as it picks up seven colors in the relief-printing process developed by Dalbolt, Inc., from wallpaper-printing methods and machines.

How Dalbolt PRINTS Cloth On Wallpaper Machines

Dalbolt, Inc., at Keene, N. H., gets unusual results by mixing a 17th-century cloth-printing method with machinery from another industry and colors and techniques that are strictly modern. With a minimum of processing, it gets—

- **Hand-blocked effects at machine-printing speeds**
- **Easy reproducibility**
- **Very low seconds**

By ROBERT W. PINAULT, Assistant Editor, TEXTILE WORLD

DALBOLT, INC., has revived and modernized an ancient Swiss art to produce striking multicolor prints on machinery originally built to print wallpaper.

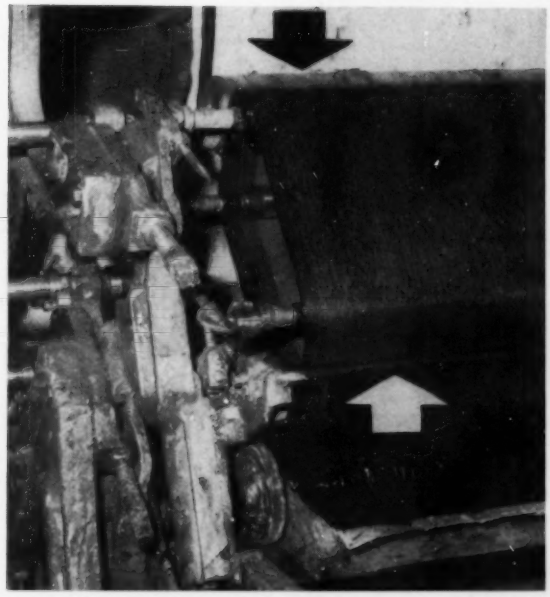
Fabrics of cotton, rayon, synthetics, and glass are processed by a relief-printing method that gives the depth and brilliance of hand-blocked effects at 50 to 60 yds. per minute.

Cloth is processed as received, and no prescouring or afterwashing is necessary. The principal lines go into draperies and bedspreads. The large repeats possible by this printing method—up to 36 ins.—make it possible to produce many patterns that could not be run on conventional cloth-printing machines.

Dalbolt uses pigment colors dispersed in a water-in-oil phase with thermosetting resins to get the desired effect. Suntone pigments, clears, and resins supplied by Warwick Chemical Co. are responsible for practically all the colors developed at the plant.

Dalbolt prints either gray goods that are selected for cleanliness or dyed fabric to be overprinted. The colors are printed on, and the cloth goes directly to a festoon dryer maintained at 250 to 280° F. where the solvents are evaporated and the resin binder is cured. No further processing is necessary; and according to W. W. Bolton, company president, seconds run less than one-half of 1%.

The same principle used in printing wallpaper is used to apply color to the cloth. An endless felt belt, similar to those used on compressive-shrinking machines, receives color from a roll



PRINCIPAL DIFFERENCES between the paper-printing machine and the usual fabric-printing machine are shown in this photo. Relief pattern on print roll (black arrow) lays color lightly on the fabric. The simple bar (white arrow) is used as a doctor blade to remove excess color from the felt belt. Belt supplies color to the printing roll.

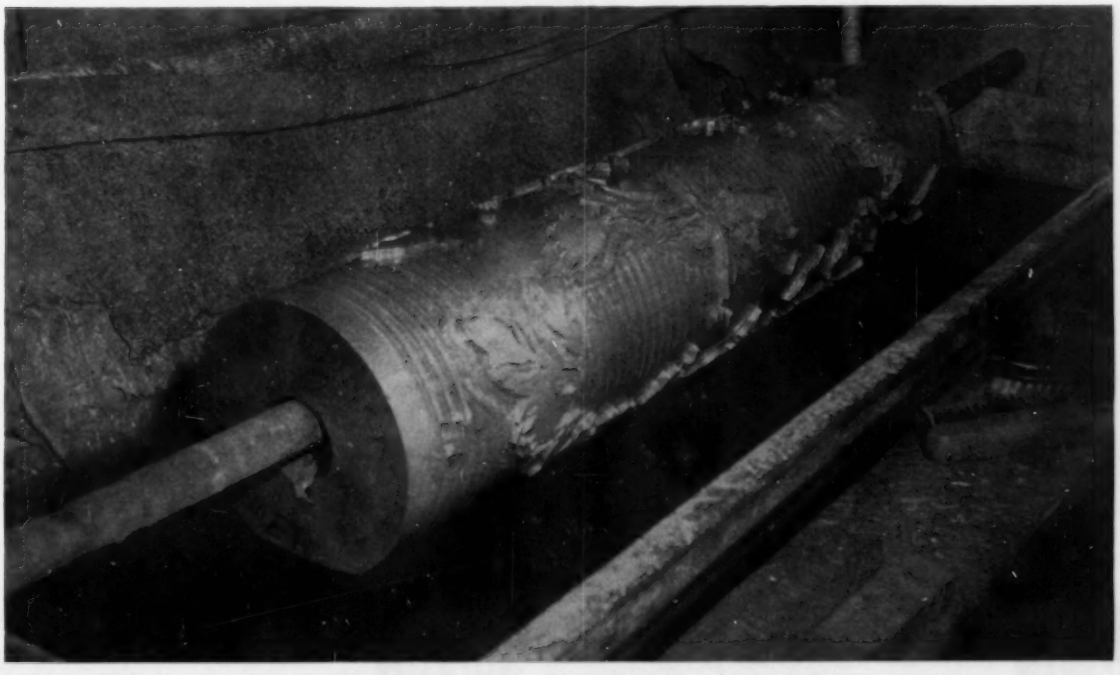
WILFRED PREVOST, chief colorist, holds a sample of cloth that has been dabbed with color against a previous print to check the match. The advantage of pigment colors is that there is little change in processing. A match at this point means a match in the finished goods.

that revolves in the color trough. The color is carried on the surface of the belt and pressed against the raised pattern on the printing roller. A doctor blade set against the felt belt is adjusted to remove excess color so that just the right amount transfers onto the printing roller.

Color is then transferred to the cloth as it passes between the printing roller and the cylinder. An engraved rubber blanket acts as a cushion for the cloth. A Dewey & Almy blanket washer works in conjunction with the printing machine to keep the rubber blanket clean.

Originally, maple rolls were used as a base upon which to apply the raised

CONTINUED ON PAGE 196



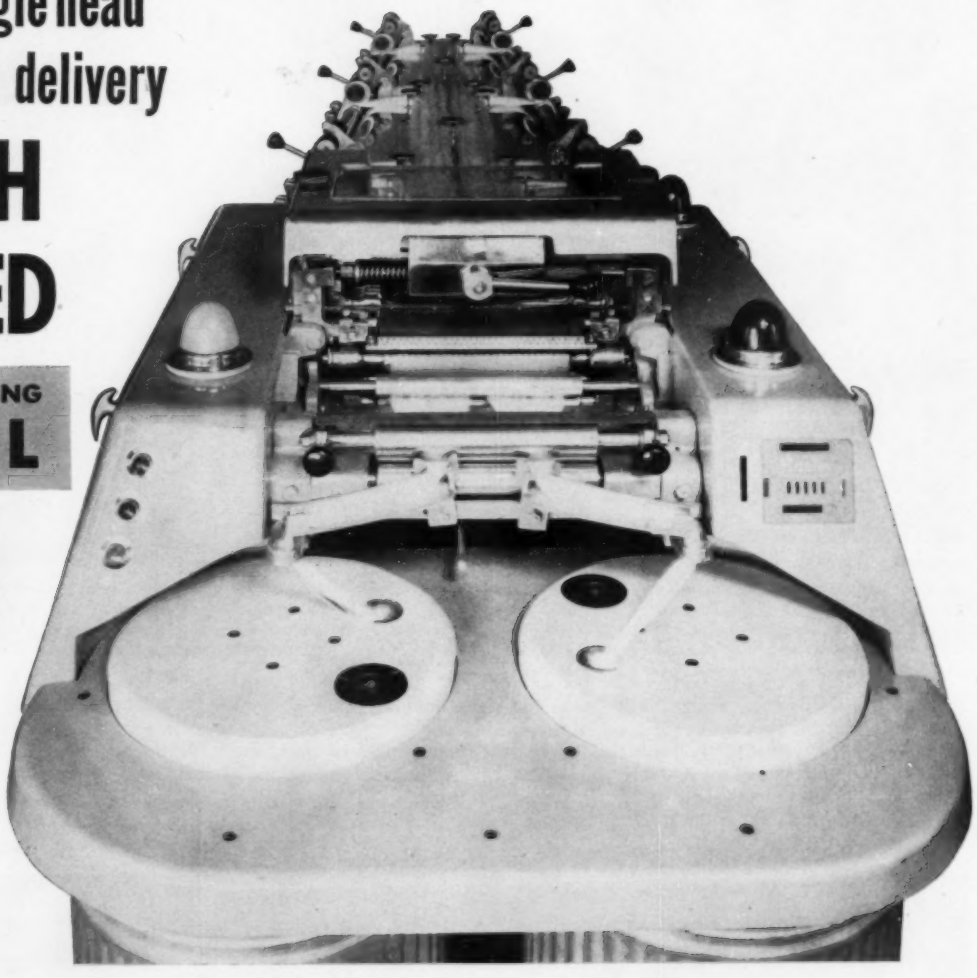
BOLD RELIEF of the patterns shows plainly in this aluminum-alloy roll mounted in the cleaning rack. After a run, the rolls must be taken out of the machine and scrubbed well with solvent so that color will not build up in finely cut areas.

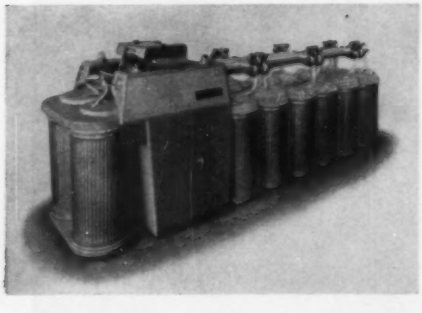
New single head multiple delivery

HIGH SPEED

INTERSECTING GILL

MODEL IR





This new INTERSECTING GILL BOX has been designed by SACM to produce quality sliver for the abbreviated systems of spinning. DELIVERY into one, two or three cans, or bi-coil into two cans, with either ball or can creels, allows versatile arrangement of machines for balanced production.

✓ NEW WEIGHING SYSTEM with patented single-spring action is efficient and simple. THE HEAD is engineered for high operating speeds, with patented triple-thread screws and special fallers for increased strength, trouble-free operation and lower maintenance.

STOP MOTIONS with different indicating lights give immediate action when a sliver is missing at either the feed or delivery end, in case of lapping in the drafting units or in the coilers, and if a faller pin comes in contact with the plate protecting the top roller.

✓ CHANGING OF GEARS is ELIMINATED for draft adjustments: a gear box gives immediate and accurate changes of draft by merely setting two levers. NEAT ENCLOSURE with flush mounting of control buttons and yardage stop motion keeps machines clean.

Please write for illustrated literature.

a. h.

Atkinson, Haserick & Co.
TEXTILE MACHINERY AGENTS & ENGINEERS SINCE 1823
211 CONGRESS ST., BOSTON 6, MASS.
1639 W. MOREHEAD ST., CHARLOTTE 2, N. C.

SAC

SOCIETE ALSACIENNE
DE CONSTRUCTIONS MECANIQUES
MULHOUSE, FRANCE

Latest Dyeing Methods For STRETCH HOSIERY

Stretch-yarn dyeing methods for hosiery discussed here include:

- **Selection of dyes for various shade ranges**
- **Workable dyeing procedures for three classifications of dyes**
- **Aftertreatments that improve washfastness**
- **Methods of dyeing for ingrain hose**

EXPERIMENTAL WORK at various temperatures has shown that for a stocking made of 70/2 yarn, 3 mins. at 220° F. produces adequate setting with maximum residual stretch. The operation is performed in a Turbo machine, with additional traps in the steam line to insure dry steam. Wet steam tends to set tint if tinted or dyed acetate yarns are used, or even cause migration to untinted yarns.

Because uniformity of dyeing is affected if temperatures in the steam chamber vary from top to bottom, an additional steam inlet may be needed to insure even temperature in the steamer.

Preboarding has been successfully eliminated by boarding after dyeing in the retort. Most of the final boarding, however, is being done on the regular internally heated forms. Preboarding is more successful with hose that are sold rolled and wrapped in cellophane or other suitable wrappings rather than hose packed in the regular manner.

Hose that have been preboarded before dyeing are now being shipped on cardboard forms or inserts that shape the hose and provide an attractive display package. The insert helps in final inspection, eliminates the pairing operation, and therefore reduces labor costs.

As in any other dyeing operation, clean goods are necessary if hosiery is to dye evenly. In stretch yarn particularly, oils and dirt tend to imbed themselves as the yarn contracts in the preboarding operation.

Acceptable scouring materials include two types: solvent plus scouring compound, and oxalic acid plus a detergent that works in an acid medium. Some scouring compounds act as dye retardants, an effect that is useful in getting level dyeings.

A typical procedure is to scour with an amine condensate in a neutral or slightly alkaline bath for 15 mins. at 185° F. The pH is then lowered to 5 with acetic acid, and the amine condensate becomes cationic and attaches itself to some of the dye sites of the nylon that normally dye most readily. The slight resist set up by the cationic material allows the dye to feed on the places that would normally be the last to absorb the dye; thus, more-level results are obtained.

This scouring method is suitable for hose being dyed with acid dyes, such as Polar Brown 2GL or Azo Rubinol 3GP, that require a slightly acid bath for exhaustion. Disperse dyes, or the more nearly neutral-dyeing milling types, work best after an alkaline scour with a detergent plus ½% soda ash at 185° F. for 20 mins.

Select Dyes Carefully

Dyes that exhaust best at high temperatures and that tend to migrate produce the most level dyeings, particularly those that require no acid for exhaustion. However, all dyes do not work well in combination, because blocking off may occur when the faster-exhausting dyes occupy the most of the dye sites. Forcing on the dye by lowering the pH may give surface dyeing.

Dyes that have proved satisfactory for dyeing Helanca yarn where no acetate is present are listed in Table I.

Table II lists dyes that are useful where acetate must be reserved.

Some direct dyes can be combined with neutral-dyeing acid colors to give good working formulations at very attractive costs. For example, black on nylon to reserve acetate can be dyed with:

Chlorazol Dark Green, #583
Sulphon Cyanine 5R
Polar Maroon V Supra

This combination gives a better acetate reserve at less than half the cost of dyeing with Nerol Black 2B.

Vat-dyed cotton yarn for decorations is often used, and some dyes that do a creditable job of reserving the cotton are:

Polar Maroon V Supra
Sulphon Cyanine 5R
Erio Anthracene Grey 2 BLN Conc.
Polar Brown 2GL
Erio Black J

After dyeing, the cotton is cleared by a light strip in hydro in cold or slightly warm water. On light to medium shades, aftertreating with Erional NW or Nylofix will clear the cotton while improving the washfastness of the nylon.

Dyeing Methods Vary

Selection of colors is important, but a steady pH during the dyeing is no less important. When possible, exhaustion of acid dyes used on stretch-nylon hose should be done by time and temperature rather than by a rapid lowering of the pH of the dyebath.

As a compromise, scouring may be

From a paper given at AATCC, Winston-Salem, N. C., by J. Vaughn Boone, Geigy Dyestuffs Div., Geigy Chemical Corp.

SES TEXTILE MACHINES *presents*

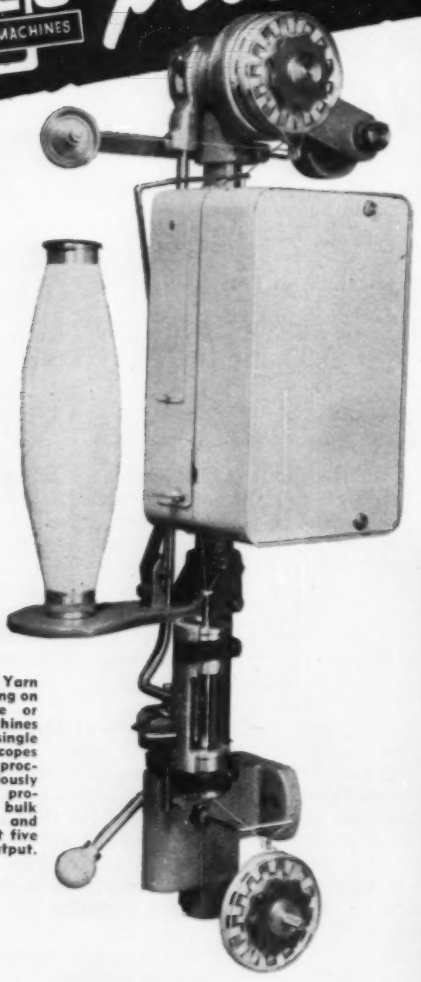
The SYDNEY & E. SCRAGG

FALSPIN

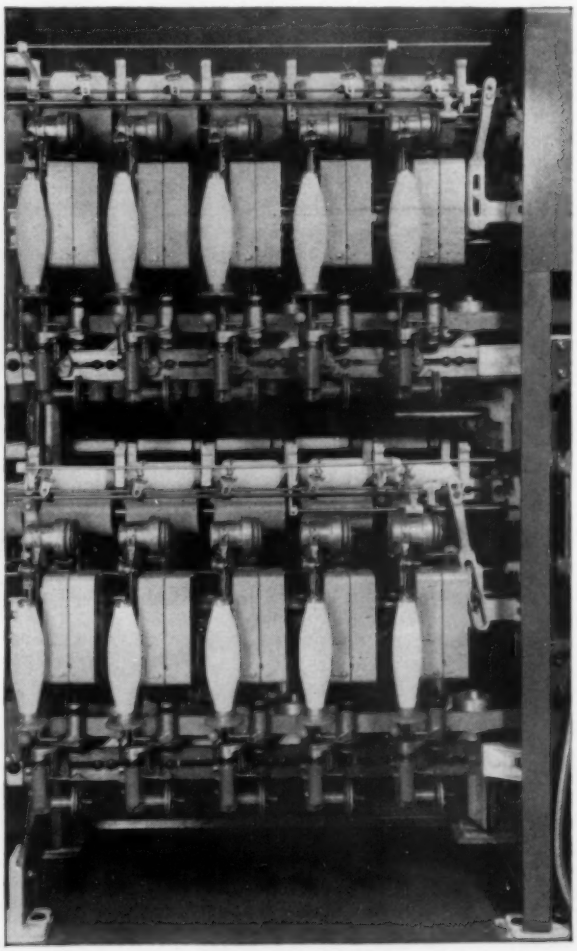
BULK STRETCH YARN UNIT

Note these remarkable features:—

- *PRODUCES CRIMPED NYLON YARN FIVE TIMES FASTER*
- *POWER CONSUMPTION IS REDUCED TO A FIFTH*
- *SUITABLE FOR NEW AND EXISTING MACHINES.*



Bulk Stretch Yarn Unit for fitting on new machine or existing machines which, in a single process, telescopes the many processes previously employed in production of bulk stretch yarn and gives at least five times the output.



Overall Power Consumption per machine is a fraction of that consumed by the normal Uptwister.

TORQUE stretch yarns in quantity, high speed false-twist method with precision quality control.

Production on 2 decks as in normal uptwisting.

Complete heat-setting gives maximum bulk and stretch.

Results equal to original multi-stage process.

Suitable for Processing NYLON, "TERYLENE", PERLON, TRIACETATE.

Licensed Manufacturers of
FLUFLON and AGILON MACHINES

SYDNEY and E. SCRAGG LIMITED

HEAD OFFICE & WORKS

OXFORD ROAD WORKS MACCLESFIELD

TELEPHONE: MACCLESFIELD 4661 (3 LINES)

performed in the last stages on the acid side; the dyebath may include ammonium acetate or ammonium sulphate, which will lower the pH gradually as the temperature is raised. In heavy shades, acid may be added after the major portion of the dye is exhausted to get full color value and help in getting repetitive results.

Disperse Dyes for Pastels

In the absence of acetate yarn, disperse dyes are suitable for pastels. Scouring on the alkaline side and dyeing at the same pH are recommended, with time and temperature the controlling factors. Dyeing starts at 110° F.; and after 5 mins. of circulation, the temperature can be raised in 20 mins. to 185° F. and maintained for 20 mins., when the dyeing is usually complete and level. If dye adds are required, they should be made slowly, with 10 mins. allowed for the feed.

A second method is based on the use of completely neutral-dyeing colors. The bath contains no dyeing assistants except in cases of dyes that exhaust too rapidly. An organic leveling agent such as Irgasol A may be of help when rapid-exhausting dyes must be used.

Scouring is followed by a warm rinse, and the dissolved dye is added at 100° F. and run for 5 mins. The temperature is raised in 20 mins. to 190 to 200° F. and held for 15 mins.; salt is then added where required. Temperature is maintained for an additional 20 mins., and the shade is checked. However, the Erio Black J type of dye must not be forced, especially with acid, or brownish shades will result.

How Low-pH Dyes Are Used

A third method of dyeing stretch nylon involves colors that require a low pH for exhaustion. Alkaline scouring is preferred by many processors; but by acidifying toward the end of the scour, the goods are prepared for the acid dyebath to follow. No rinse is given after scouring if heavy shades are to be dyed; but for pastels, a cold rinse to remove acid may be required.

The dissolved dyes are added to a cold bath and run for 5 mins. Then the temperature is raised to 200° F. in 20 mins. After 15 mins. at 200° F., acid is added where required and the dyeing continued for 15 mins. If ammonium salts are used, they are added prior to the dyestuffs; and no acid is used. Other conditions remain the same.

Selected top-chrome dyes are preferred in some cases where fastness and economy are factors.

Heavy shades dyed with neutral milling dyes can be improved in washfastness by aftertreating with Erional NW or Nylofix. For maximum fastness, the following treatment is recommended:

Tannic acid, 2% owg., is added to the dyed and rinsed goods. The temperature is raised to 160° F. in 10 mins. and held there for 10 mins. Then 2% owg. tartar emetic is added slowly to the bath and allowed to circulate 15 mins. A cold rinse is followed by soaping at 140° F. for 10 mins. In some cases, acetic acid up to 2% owg. along with the tannic acid will help to hold the dye on the goods until fixation is complete.

Nonionic or cationic softeners work well in providing lubrication and a soft hand. Adding ¼% of calcium chloride increases absorption of the softners and helps moisture regain as well as elasticity.

How To Dye Yarn

Dyeing stretch yarn for ingrain hose has been approached by several means. One method involves dyeing the yarn before the twisting process. Another process is based on knitting the stretch yarn into tubes, dyeing it, and then unraveling it onto cones. Additional set during the dyeing process produces a pebbled effect in hose knitted from yarn dyed in this way.

The latest method is to dye the yarn on skeins that have been made on a skein-winding machine with a traverse adjusted to allow the yarn to relax from side to side as well as lengthwise. The skein relaxes to the point where it can be dyed in a package machine. A spreader opens the center of the skein or muff so that it may be placed on the perforated tubes of the package machine. A knit cover or lacing is used to prevent tangling.

Backwinding onto cones without tangling has presented some problems with yarn dyed by this method, but most operators have overcome the difficulties of tangles. Yarns dyed in this way knit well, have adequate stretch, and produce a smooth fabric.

Yarn dyed on these muffs is also being plied with vat-dyed cotton to produce core yarns for the increasingly popular ingrain knitted nylon-and-cotton-combination stretch hose.

TABLE I

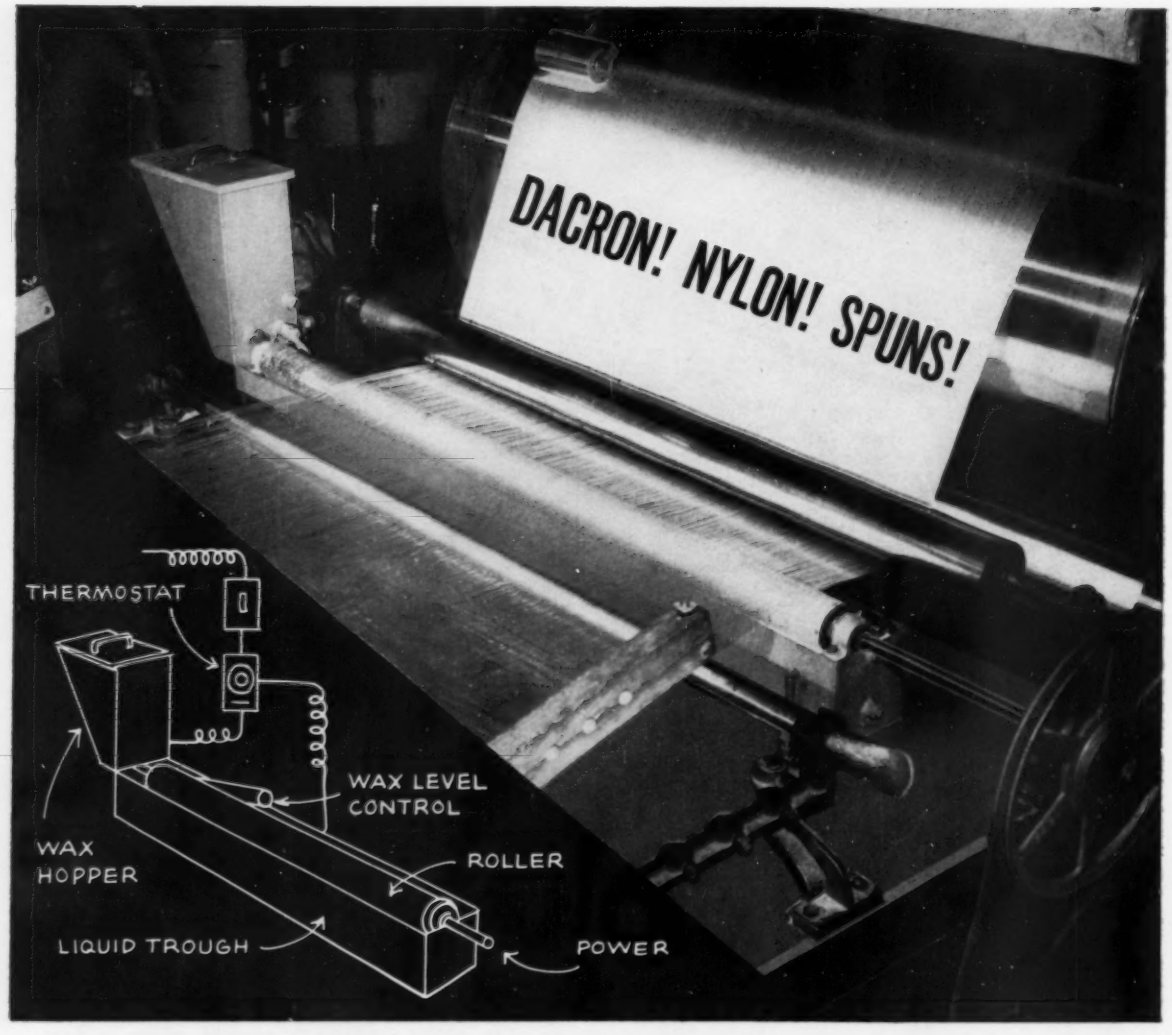
		Index No.
Maize	Acetate Yellow G	PR 242
Light blue	Acetate Blue FF	PR 228
Pink	Acetate Scarlet B	PR 238
Mint	Acetate Yellow G + Acetate Blue FF	

THESE DYES work well with Helanca yarn where no acetate is present.

TABLE II

		Index No.
Maize	Polar Yellows	642
Tan	Polar Brown 2GL + Erio Anthracene Grey 2BLN Conc	No index listed No index listed
Gray	Polar Brown 2GL + Erio Anthracene Grey 2BLN Conc	
Light green	Polar Yellows + Alizarine Sky Blue B	642 1088
Light blue	Alizarine Sky Blue B	1088
Pink	Azo Rubinol 3 GP	PR 412
Navy	Sulphon Cyanine 5R	289
Cordovan	Sulphon Cyanine 5R + Polar Maroon V Supra + Polar Yellows	No index listed
Maroon	Polar Maroon V Supra	
Dark green	Alizarine Cyanine Green	1078
Black	(a) Nerol Black 2B (b) Sulphon Cyanine 5R Polar Yellows	304

TO RESERVE ACETATE yarns in dyeing Helanca, these dyes are most suitable. (When no acetate is to be reserved, Erio Black J is suggested.)



AFTER-WAX WITH CONVAX

the high melting protective coating that is 100% emulsifiable

NO GUMMING AT SLASHER OR LOOMS — NO FINISHING PROBLEM

This new wax and its applicator are engineered for this textile use. Constant wax level is maintained with size level control that ensures even application. Unit is completely automatic and readily installed on any slasher. Please write for details. **BRYANT CHEMICAL CORPORATION** 6 North St., N. Quincy 71, Mass. or Box 2301, Spartanburg, S. C.

Brytex

CONVAX

For more information, write direct or use Reader-Service post card.

Factors of cotton quality	Relative contribution to yarn strength in percent			
	1948 (277 cottons)	1949 (260 cottons)	1950 (305 cottons)	Average (842 cottons)
14s				
Upper-half mean length	51.56	31.04	16.04	32.88
Fiber strength	14.25	28.32	28.01	23.53
Fiber fineness (wt. per in.)	5.42	3.80	19.18	9.47
Grade index	2.74	7.35	2.25	4.11
Length uniformity ratio	1.92	1.53	7.51	3.65
Percentage of mature fibers	0.01	0.56	2.61	1.06
22s				
Upper-half mean length	45.38	27.40	17.71	30.16
Fiber strength	20.87	35.73	28.99	28.53
Fiber fineness (wt. per in.)	7.41	6.67	19.33	11.14
Grade index	2.36	6.89	2.38	3.88
Length uniformity ratio	1.04	0.72	6.93	2.90
Percentage of mature fibers	0.04	0.09	2.06	0.73
36s				
Upper-half mean length	53.82	28.98	24.22	35.67
Fiber strength	11.68	29.71	27.09	22.83
Fiber fineness (wt. per in.)	9.28	10.52	18.97	12.92
Grade index	1.29	8.22	1.98	3.83
Length uniformity ratio	1.43	.67	4.57	2.22
Percentage of mature fibers	.00	.00	2.77	0.92
50s				
Upper-half mean length	58.35	37.95	24.06	40.12
Fiber strength	7.35	22.35	21.10	16.93
Fiber fineness (wt. per in.)	13.21	13.14	23.61	16.65
Grade index	0.95	4.76	1.43	2.38
Length uniformity ratio	2.06	0.76	4.98	2.60
Percentage of mature fibers	0.18	0.34	3.92	1.45

CALCULATIONS are based on the values of coefficients obtained from multiple-correlation analysis. The figures show the average relative contributions of six fiber properties to skein strength of four yarns.

How Fiber Properties Influence YARN STRENGTH

• A study of the 1948-50 cotton crops indicates that the upper-half mean length, fiber strength, and fiber fineness definitely affected the skein strength of 22s to 50s carded yarn. Length-uniformity ratio, percentage of mature fibers, and grade of cotton had little influence on yarn strength and size.

FIBER AND YARN TESTS made on 842 cottons from the 1948-50 crops show that three fiber properties affected the skein strength of 22s to 50s carded yarn.

1. The upper-half mean length increased from 30 to 42% in importance to yarn strength as the yarn size decreased from 22s to 50s. The opposite trend appeared in 14s to 22s.

2. Fiber strength decreased from 30 to 16% in 22s to 50s but increased from 23 to 30% in 14s to 22s.

3. Fiber fineness increased from 10 to 16% in all yarns tested from 14s to 50s.

Three other quality factors studied (length-uniformity ratio, percentage of mature fibers, and grade of cotton) made small contributions to yarn strength and showed no perceptible trends affecting yarn size.

The evaluated contributions of upper-half mean length and fiber strength to the strength of the 22s, 36s, and 50s yarn appear to be in proper sequence. However, the contributions of these two factors to the strength of 14s yarn appear to be out of line.

On the basis of averages for the entire series of 277 cottons from the 1948 crop, the relative levels of strength for 14s and 22s yarn are in close agreement. But if the values representing differences between converted and actual yarn strength for those samples are stratified by variety and date of harvesting, disparities appear in the relative levels of strength for the 14s and 22s yarn.

Acala 1517 and Coker 100 Wilt

CONTINUED ON PAGE 198

Based on "Influence of Yarn Size on the Relative Contributions of Six Cotton Properties to Strength of Carded Yarn" by Robert W. Webb, U.S. Dept. of Agriculture.

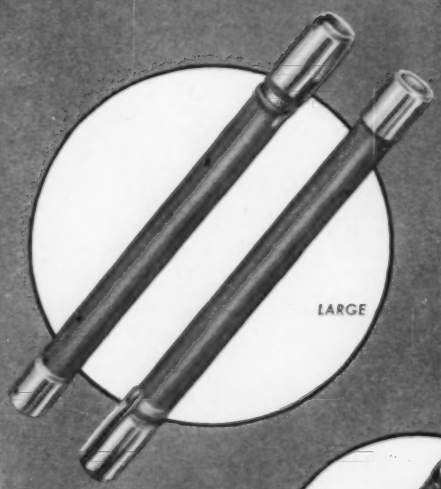
THERE IS NO SUBSTITUTE FOR

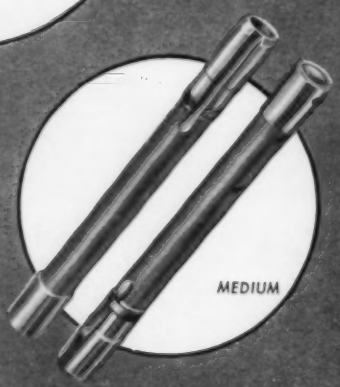
SACO-LOWELL BOLSTERS

Don't be misled into believing that all bolsters are alike . . . or that highly engineered bolsters will not give any better or longer service than job-shop bolsters.

The original spindle manufacturer knows exactly how much tolerance to allow at the spindle base, loose-lock step, and upper boss — since he alone has the original bolster specifications.

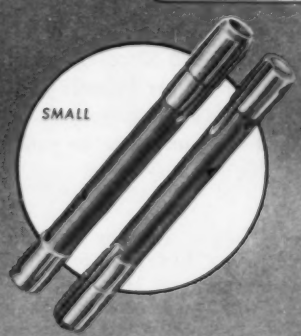
If tolerances, concentricity and finishes are not of the best in substitute bolsters — What happens? Increased power consumption . . . less effective lubrication . . . vibration . . . bobbins not running true . . . quality of the yarn impaired.





Saco-Lowell's line of McMullan Loose-Lock Step Bolsters result in trouble-free spinning, highest quality yarn and general all-around performance of the highest calibre. In addition, these Saco-Lowell Bolsters are priced competitively — no other bolsters of comparable quality can match McMullan Bolsters in dollar-for-dollar value.

LARGE . . .	Spring type Key type
MEDIUM . . .	Spring type Key type
SMALL . . .	Key type Pin type



For long-term spinning satisfaction, use Saco-Lowell Bolsters on Saco-Lowell Frames. The Saco-Lowell experience and modern methods of manufacture and control are unsurpassed. Ask a Saco-Lowell Repair Sales representative to discuss bolsters with you in further detail.

"There is hardly anything in the world that someone cannot make a little worse and sell a little cheaper — and the people who consider price alone are this man's lawful prey."
JOHN RUSKIN

SACO-LOWELL
60 BATTERYMARCH STREET, BOSTON 10, MASS.
Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.
SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

POINTERS for SUPERVISORS

Walk Across the Job To Test Your Supervisory Skill

- **Do you know how to get the most mileage out of a walk across the job? Do you know what to look for—and do you really see what you look at?**
- **Here are some ideas on how to keep abreast of the job as you walk from place to place.**

By WILMER C. WESTBROOK, Assistant Editor, TEXTILE WORLD

A spinning-room overseer once said that the chief failing of most supervisors is that they don't know how to walk across the job. Asked to explain the statement, he continued:

"To effectively run a job, a supervisor should be able to walk from one side of his job to the other and, when he reaches the other side, he should know the present condition of everything pertaining to the job.

"He should know how many employees are off the job, how many flags are up for the section men, and just what the section men are doing. He should know how many ends are down, how many frames are waiting for the doffers, if the doffing cycle is getting out of line, the condition of the floors, the temperature and relative humidity, the general running condition of the job, and many other routine matters.

"He should be able to notice anything unusual, whether machinery, materials, or men, and take corrective measures without upsetting his regular schedule."

How many supervisors actually know how to walk across their jobs? Or of those who know the basic principle, how many practice it?

Keep Your Feet off the Desk

A supervisor has so many details crowding him that it's hard for him to cross his job without being sidetracked. Yet, to be a successful supervisor, you have to keep abreast of the job. The only way to be sure of just what is going on is to get out on the job and see for yourself. A supervisor can't get things done with his feet on the desk—or under the desk, either.

To simply walk across the job and look is not enough. There is a lot of difference between merely observing and actually perceiving. Nothing is gained by seeing an object if its image is not carried to the brain and properly evaluated. For instance, if the supervisor sees a machine standing idle, it should start a chain reaction in his mind. Why is the machine idle? Who is responsible? What can be done to get the machine back into production?

The average supervisor has a one-track mind. Tell him to check something on the opposite side of his job, and watch him make a beeline for the target. He will resent it if someone tries to stop him and will usually tell the person that he will see him later and then promptly forget it.

When the assigned task has been completed, he will then think of something else that needs his attention and will concentrate on the new problem as he walks back over the same route, looking neither to the right nor to the left.

If you think this example is an exaggeration, test it on yourself, a fellow-supervisor, or a subordinate.

Takes Notes To Remember

Some people have an indelible memory and can recall, at will, full details of anything they have seen or heard. Unfortunately, most of us aren't blessed with such a valuable accessory. But we can take notes. They don't need to be elaborate memorandums but just a word or two and some figures—something to jog the memory and some accurate data to substantiate it.

There are examples around us every day that prove we see without actually having the image impressed on our minds. Listen to the testimony of witnesses to an accident: no two will agree on the details, yet they all saw the same thing happen.

Too often we look for certain things so hard that we close our minds to everything else. A preconceived image is implanted in our minds and, even though our eyes see something entirely different, our brains refuse to accept it.

Proof that we see only what we are looking for can be demonstrated in the grading section of a cloth room. Tell the inspectors that a certain type of defect, say jerked-in filling, is increasing. The number of these defects that are found will instantly show an increase simply because the inspectors have been told there is an increase and they concentrate on finding them.

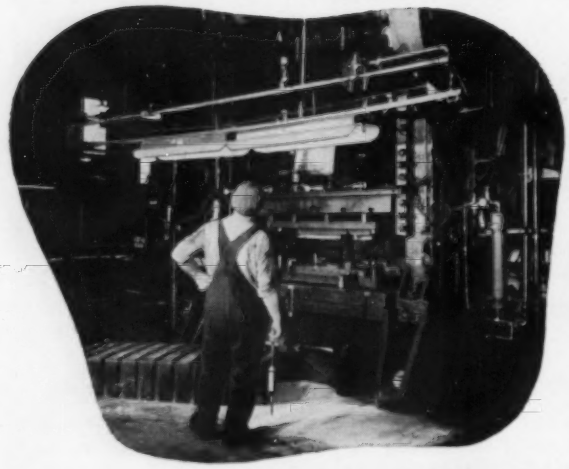
Return later and tell the graders that the jerked-in filling defects have decreased but that broken picks are on the increase. The scales will then swing, the number of broken-pick defects found will actually show an increase, and the pressure will be taken off the other defects.

CONTINUED ON PAGE 186

SAVINGS START

when you stop "hand feeding" hungry bearings... and change lubrication methods from

Backward to Forward!



ALEMITE PORTABLE POWER GUN

saves 23.9 man-hours for every 100 pounds of lubricant

...saves right down the line!

• A 400-pound barrel of lubricant—any type—arrives at plant oil room. It's sealed, fresh, "refinery-clean."

• An Alemite Power Transfer Pump is inserted in drum. Lubricant stays sealed against dirt, grit, contamination.

• In just 60 seconds a portable power gun is filled with lubricant that is still as fresh as when it left the refinery. No mess—no waste!

• Alemite Portable Power Gun is ready to roll anywhere in the plant . . . to service hundreds of bearings with clean, safe lubricant!

Are you lubricating hundreds of bearings with ordinary hand gun equipment that's best suited to service only a *couple of dozen bearings*?

An ordinary hand gun can be emptied in a few minutes. But an Alemite Power Gun gives positive, fast, safe lubrication to hundreds of bearings *without a single re-fill!* This difference means a saving of *23.9 man-hours* on every 100 pounds of lubricant used. Because lubricants are always kept "refinery-fresh," machines get better protection, have less breakdowns. You make important *savings in machine-hours* . . . increase production, cut maintenance costs!

An Alemite Portable Power Gun eliminates wasteful spillage . . . makes housekeeping easier, less expensive . . . reduces product spoilage. Air or electrically operated models for all types of lubricants. There's a type and size pump for your plant. Mail coupon at right for the full story about Alemite savings!

***FREE!* New Booklet:**
"5 Plans for Better Lubrication"
Alemite, Dept. J-66 1850 Diversey Parkway Chicago 14, Illinois
Please send me my FREE copy of "5 Plans for Better Lubrication."

Name .....

Company .....

Address .....

City ..... State .....

ALEMITE
REG. U. S. PAT. OFF.

A PRODUCT OF SW STEWART WARNER

Ask anyone in industry

A Product of STEWART-WARNER CORPORATION

EQUIPMENT and SUPPLY NEWS

Automatic Winders

A range of automatic small-package winding machines has been introduced by Muschamp Textile Machinery Ltd., Bardsley, England, which is represented in the U.S. by Foster Machine Co., Westfield, Mass. The winders can automatically doff the wound package after a predetermined length has been accurately wound, whether the thread is a few thousand yards or only 10 or 20 yds.

As an alternative to the standard length-measuring motion built into the machine, a bevel-and-worm measuring device has been developed that deals with a wide range of yarns and finished-package diameters.

Where greater precision of wound length is required, a Trumeter counter is fitted to actuate the automat electrically once the preset length has been wound. Another length-measuring motion, especially suited for lengths below 150 yds., uses a chain drive.

Broken-thread stop motions use electric limit switches, which are completely sealed and entirely dustproof and oilproof.

When packages such as sewing-thread spools, cones, and braider bobbins are wound, the linear yarn speed is greater when the package is full than when the winding started. To allow for the change in yarn tension accompanying changes in yarn speed, a tension-relieving motion is provided that maintains an even tension throughout the winding of the package regardless of diameter.

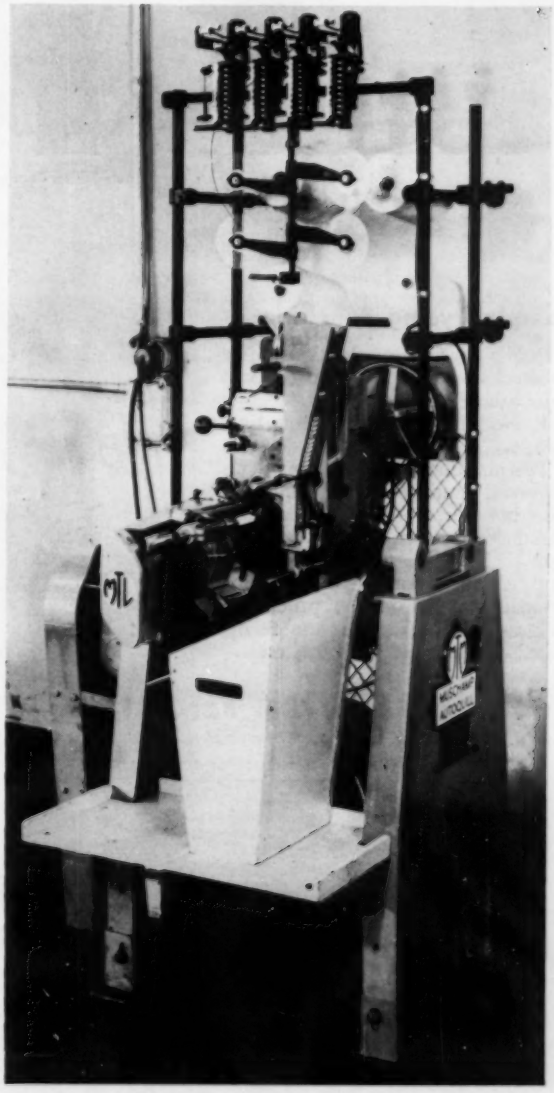
Hopper-type magazines, available for most packages, are able to accommodate many tubes to allow machines to run for longer periods without supervision.

A mechanism fitted to the machine for winding braider bobbins is a front or back stopping motion used when required to finish winding near one or the other of the bobbin flanges. On the same machine, a compensating tension gives improved uniformity of yarn tension on every end wound while a stacker box accumulates the wound bobbins.

Each winding spindle with its automat forms a self-contained machine unit, available singly or mounted in banks of up to 20 spindles. Individual spindle drive from a fractional-horsepower motor is fitted. A separate motor is used for driving the automatic doffing motions.

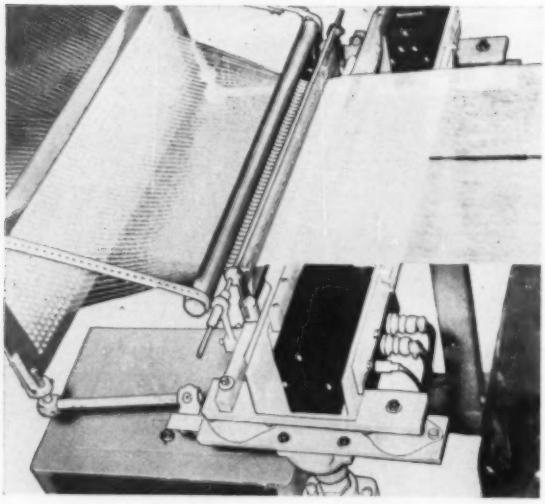
Speeds up to 6,000 rpm. are possible with a parallel-wound braider bobbin. With a five-wing taper-ended narrow-fabric-loom quill, a speed of 2,500 rpm. would be appropriate.

Different cams are provided on all machines for traverse lengths up to 5½ ins. On all machines, except the auto-thread and the auto-cone winders, the traverse length is adjustable for each cam. The maximum full-package diameter that can be handled on the machine is 2 ins.



One operator winding Barmen-type braider bobbins can produce 310 bobbins an hour, with one end of 12/2, and 240 bobbins an hour, with two ends of 30/2.

Circle T-1 on Reader-Service Card



Automatic Yarn Inspector

Lindly & Co., Inc., 248 Herricks Rd., Mineola, L. I., N. Y., has developed an automatic yarn inspector for the 100% inspection of defects in multifilament yarns.

The sensitivity of this electronic unit can be adjusted to detect a break in a single filament at all speeds within the range of yarn-handling equipment.

The machine automatically counts the yarn defects for quality-control purposes or stops the operation for their removal.

Warping speeds can be doubled and personnel reduced 50%.

On a single-end basis, an abrupt variation in diameter both above and below the norm can be determined.

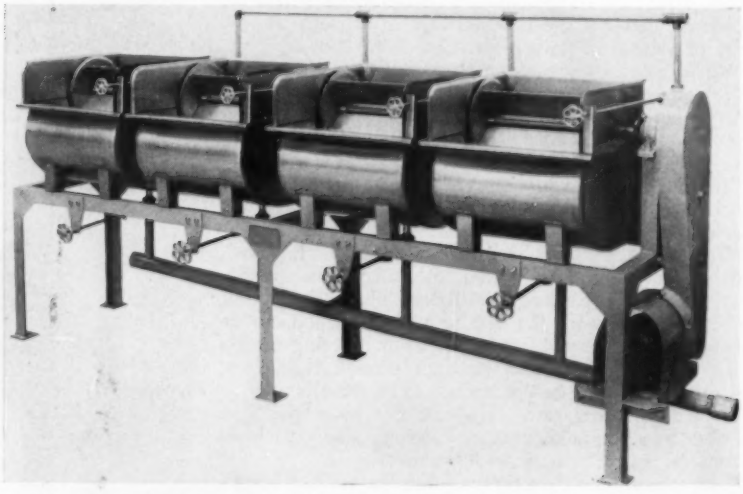
In multiend applications, only discrepancies above the average diameter will trigger the unit. However, in the detection of broken filaments in continuous multifilament yarns, individual broken filaments can be detected on a multiend basis, such as in warping, whether the broken filament has been compacted into a so-called snowball or not.

Circle T-2 on Reader-Service Card

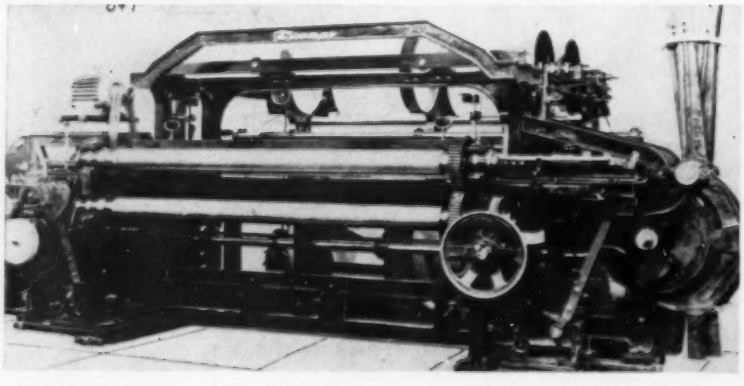
Sample-Dyeing Machine

Paddle dyeing machines can be obtained in batteries of two or more units from Freeman, Taylor Machines Ltd., Necton St. Works, Syston, England.

The machines are made of stainless steel and equipped with perforated false bottoms. Dye and steam are introduced between bottoms. A common shaft rotates the paddles simultaneously in all units. Provision can be made to convert the paddles to reels so that the machine can be operated as a series of small dyebecks.



Circle T-3 on Reader-Service Card



Wide-Carpet Looms

Double-shuttle pile-fabric carpet looms are being built by Felix Tonnar, Duelken, Rhineland, Germany, and are being sold in the U.S. by Texma Import Co., 2226 E. Dauphin St., Philadelphia, Pa. The looms are for both plain and jacquard weaving.

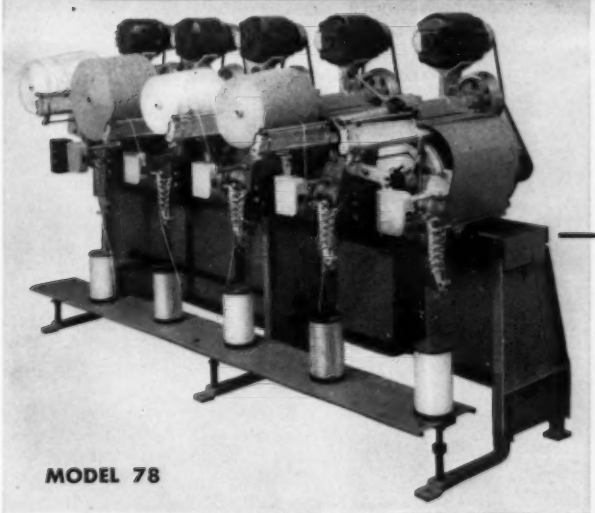
The looms are made in three widths: 12, 15, and 18 ft. The 12-ft. loom operates at 55 ppm., and the 15-ft. loom runs at 50 ppm. The main shafting is 3⅜ ins. in diameter. All looms have automatic let-offs and 40-in.-dia. beam flanges.

Circle T-4 on Reader-Service Card

FOSTER MACHINES *for winding*

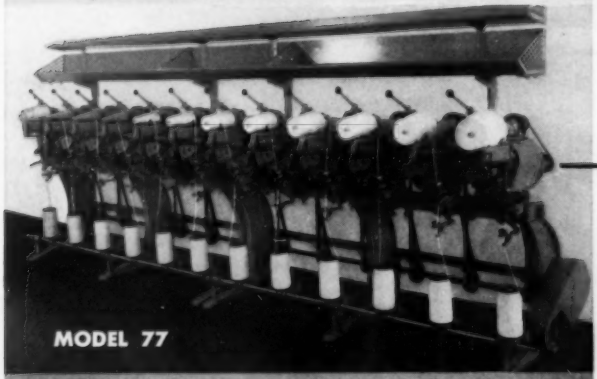
TUFTED TEXTILE YARNS

One is Best Suited For Your Requirements



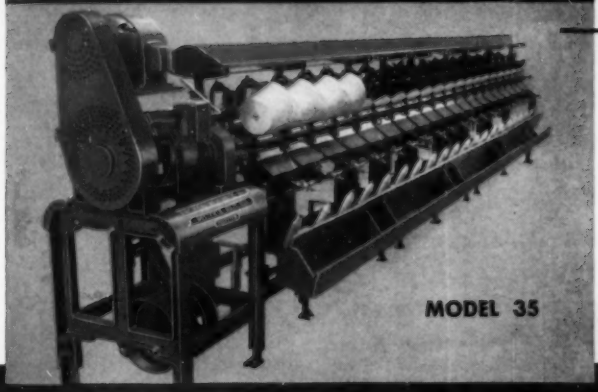
MODEL 78

MODEL 78 – This machine (built in 5 spindle units) produces 8" to 10" traverse, precise wind cones up to 16" in diameter and weighing up to 35 lbs. each. Ball bearing spindles are individually motor driven at speeds up to 800 R.P.M. It has controlled slow start and spindle brake, heavy duty belt gainer with hand wheel adjustment (or positive gear gainer, if desired), positive size stop, electric drop wire and expansion type cone holders, with handle control, for easy donning and doffing. Will wind overend from bobbins or from swifts, reels or unrolling devices.



MODEL 77

MODEL 77 – Built in 6 spindle sections, produces 4" to 8" traverse, precise wind cones up to 10" in diameter and weighing up to 14 lbs. each. Ball bearing spindles, individually belt driven by one motor, run at speeds up to 1100 R.P.M. It has a positive, long wearing package brake and positive solid tapered pulley belt gainer. It will wind overend from bobbins, or from swifts, reels or unrolling devices. 90° build-up from face of cone prevents broken back or under-wound packages.



MODEL 35

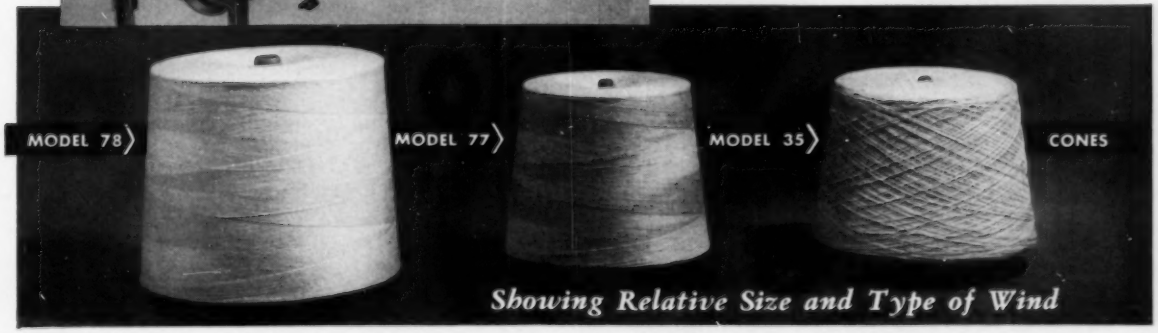
MODEL 35 – Built in units of 10 spindles to 80 spindles. Produces open wind 8" traverse cones up to 11" in diameter and weighing up to 9 lbs. each. Winding speed from bobbins is from 180 to 250 Y.P.M. and from skeins 100 to 150 Y.P.M. Standard taper cone holders are 7° 22½′ and 3° 51′. Package brakes and disc waxing attachments are extra. Can be equipped to wind from swifts, etc. as well as from bobbins. Write for Model 78 bulletin A-98A, Model 77 bulletin A-99, or Model 35 bulletin B-46A.

FOSTER MACHINE COMPANY

Westfield, Massachusetts, U.S.A.

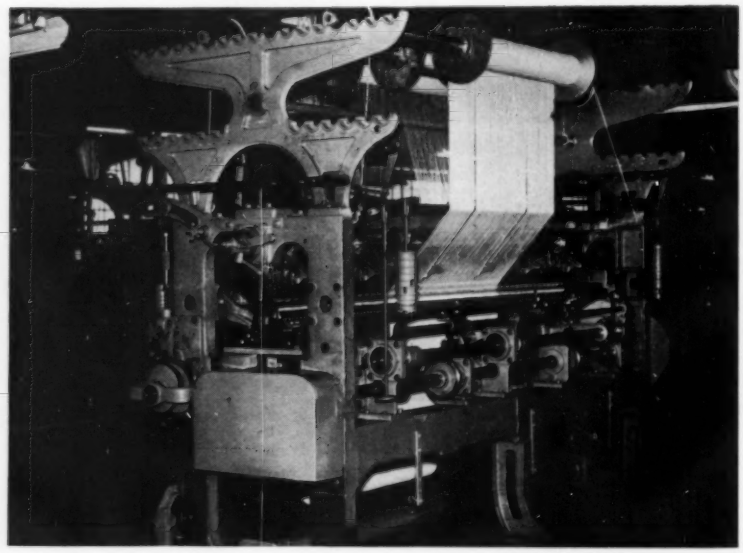
Southern Office, Johnston Bldg., Charlotte, N. C.
Canadian Representative, Ross Whitehead & Company Limited, 1475 Mountain St., Montreal, Que. and 35-37 King St., Toronto, Ont.

European Representative, Muschamp Textile Machinery Limited, Keb Lane Bardsley, Oldham, England



Showing Relative Size and Type of Wind

 For more information, write direct or use Reader-Service post card.



Circle T-5 on Reader-Service Card

Pile-Fabric Machine

A raschel knitting machine especially adapted to produce a variety of pile fabrics has been introduced by Karl Lieberknecht, Inc., Reading, Pa. The fabrics, of various heights and textures, can be used for floor coverings, upholstery fabrics, and outerwear fabrics.

The loops will not pull out or run because they are locked in the fabric construction. A 24-gauge machine on rayon pile fabric produces about 25 linear yards per hour. The width is up to 100 ins.

The machine can also be used as a regular raschel machine to produce nets, laces, and other fabrics.

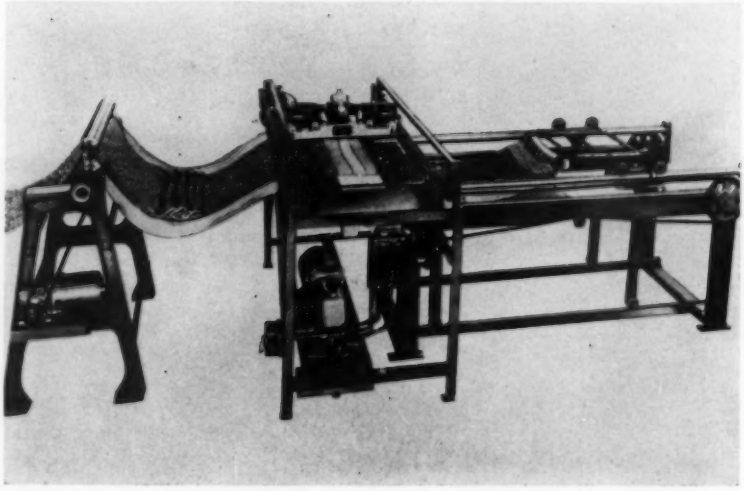
Automatic Cutting Machine

Tablecloths, napkins, towels, and similar articles woven or printed in series can be separated into the proper units by an automatic cutting machine developed by Sjöström Machine Co., Boca Raton, Fla.

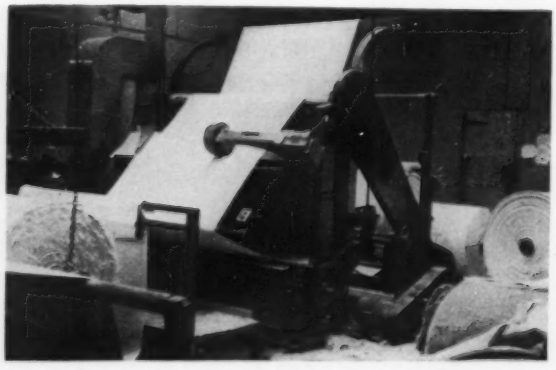
A photoelectric eye is used to detect the cutting line or thread, and the knife cuts along the line. Where no line or thread exists, the machine cuts halfway between patterns.

A difference of 10% in light penetration between pattern and background actuates the photoelectric cells.

The goods are automatically fed, cut, and stacked by the machine, which requires no operator except to supply fabric and remove the cut units.



Circle T-6 on Reader-Service Card



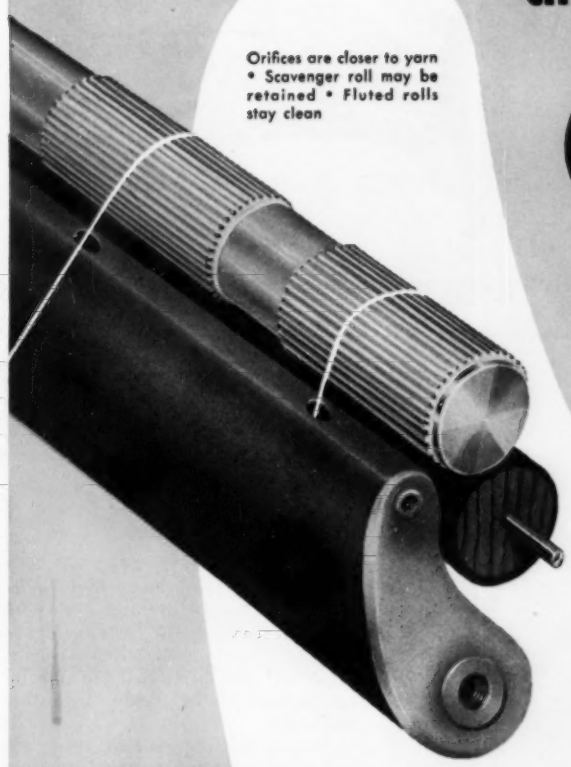
Heavy-Duty Batcher And Inspecting Machine

Designed to handle large rolls of heavy materials, a heavy-duty machine can be used for inspecting, measuring, and rebatching any type of fabric.

The unit is made by G. Durrant & Sons Ltd. and sold in the U. S. by R. J. Dealey & Sons, 263 Summer St., Boston, Mass.

Circle T-7 on Reader-Service Card

the AUGUSTA fiber suction system for Spinning*



Orifices are closer to yarn • Scavenger roll may be retained • Fluted rolls stay clean

THE AIRFOIL SHAPE of the Augusta suction nozzles is a great improvement over other suction nozzles in several important respects. Here are some of them.

1. *Orifices are closer to the yarn.* This picks up broken ends when they occur at off-center points on the fluted front rolls and thereby prevents doublings. It also removes more loose fly and produces cleaner yarn.
2. *Greater aerodynamic efficiency.* Pressure drop along the entire system is at a minimum and less horsepower is required for maximum vacuum.
3. *Heavy gauge aluminum construction.* The sturdiest nozzle made—will not distort or crush. Anodized *in any color* for a permanent finish.
4. *Permits the use of a scavenger roll*—if desired. This keeps the entire fluted roll clean—another contribution to better yarn and longer fluted roll life. Scavenger rolls need be cleaned only once a month.

YEARS OF PROVEN DEPENDABILITY Augusta Systems have given years of unmatched service on millions of spindles abroad—against all competitive makes. They have been in operation in several leading American mills and have won immediate and enthusiastic approval. Now the W. D. Dodenhoff Co. offers you the valuable advantages of this up-to-the-minute suction system. Call us today for an engineering survey—without obligation on your part.

Sole Agents: Lendt & Co., 535 Fifth Ave., New York

*U. S. Patents applied for.

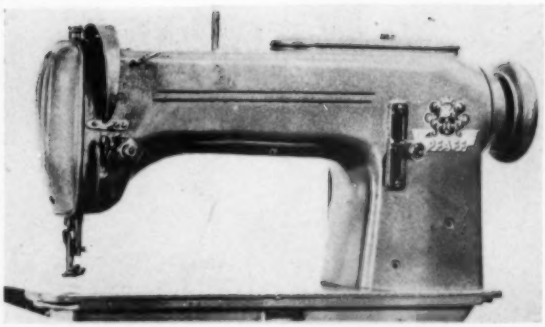
Exclusively Sold and Serviced by

W. D. DODENHOFF CO.
INCORPORATED
GREENVILLE, SOUTH CAROLINA

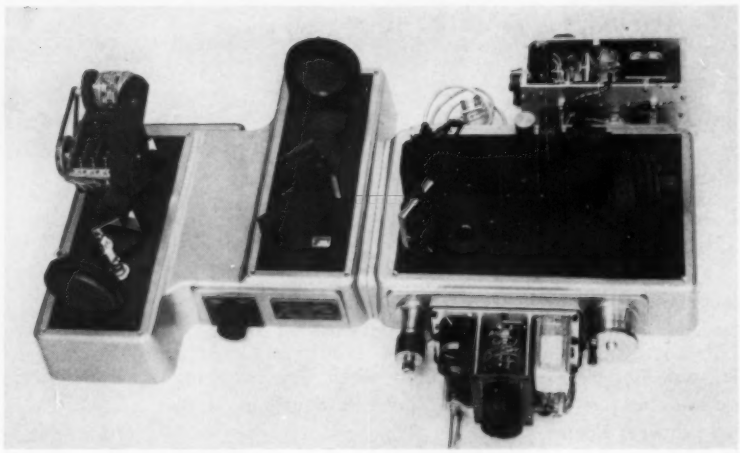
Fine-Sewing Machine

The Pfaff Model 234 sewing machine will produce up to 4,000 stitches per minute on underwear, sheeting, handkerchiefs, or tricot. The machine is a single-needle lockstitch machine with wick lubrication and was designed particularly to produce uniform stitches on very light materials.

The machine is made by Pfaff Industrial Sewing Machine Co., 82-86 N. Clinton St., E. Orange, N. J.



Circle T-8 on Reader-Service Card



Spectrophotometer

The Model 13 spectrophotometer, introduced by Perkin-Elmer Corp., 2135 Summer St., Stamford, Conn., can be used for examining synthetic fibers. Using the principles of microscopy to pass infrared radiation through the fiber, the instrument can provide valuable information on many important properties that are difficult or impossible to study by other methods.

Among the subjects that can be examined are solvent capture, exposure to sunlight or ultraviolet radiation, finishes, ageing, fiber orientation, and identification of unknown fibers.

The instrument is equipped with a double-beam head and a single-pass monochromator and can be used either single or double beam for macro work and single beam only through the microscope.

Circle T-9 on Reader-Service Card

Twin-Sliver Drawing

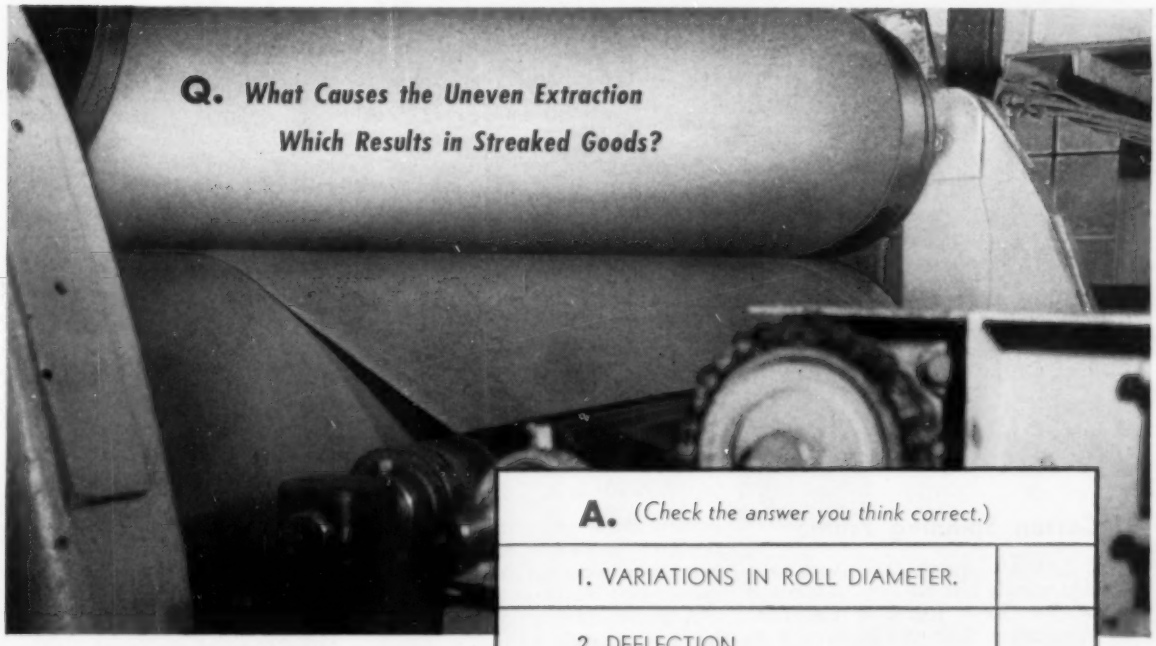
A twin-sliver drawing frame, which has sufficient space (25⅝ ins.) between deliveries to permit the use of 14-in. cans, has been announced by Joh. Jacob Rieter & Co. Ltd., Winterthur, Switzerland, through its agent, American Rieter Co., Arlington, N. J.

The double-nip drafting system, said to produce a sliver of great evenness, has four lines of fluted rolls and three lines of top rolls. The top rolls are fitted with needle bearings and synthetic cots.

Circle T-10 on Reader-Service Card

STOWE-WOODWARD Maintenance Tips

for better finishing at lower cost



A. (Check the answer you think correct.)	
1. VARIATIONS IN ROLL DIAMETER.	
2. DEFLECTION.	
3. MACHINE FATIGUE.	

You'll find the correct answer in these Maintenance Tips

Any one of the answers shown can be correct, for actually, these are the three main causes of uneven pressure. It is important to correct all of these conditions where they exist, for uneven pressure results in uneven moisture extraction, shading, excessive roll wear, and even damage to the bearings or the machine itself.

When there is excessive pressure at a particular point in the nip, a check of the roll diameter at this point will determine whether or not the roll should be reground to a uniform diameter. When, however, pressure is excessive on both ends of the rolls, the cause is probably deflection, and the pressure should be reduced, or the roll rebuilt on a more rigid core. When a careful check of the roll fails to indicate any condition which could cause uneven pressures, it is well to check over the machine itself. Fatigue of pneumatic and hydraulic devices, such as leaking gaskets or frozen pistons, can cause uneven pressures.

Your Stowe-Woodward Sales Engineer will be glad to advise you on any problem regarding the care, selection or operation of rubber covered rolls.

"RUBBER ROLLS with a REPUTATION"

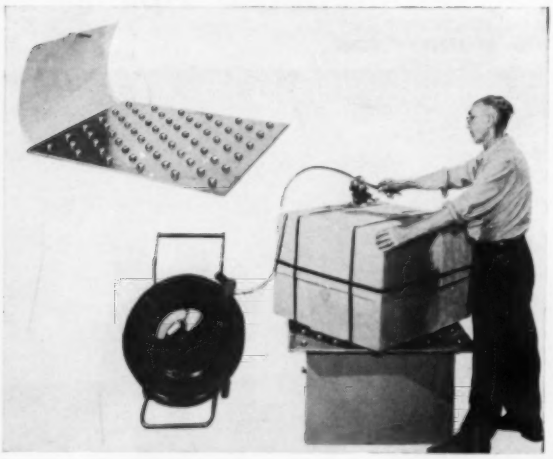
S-W INC.

STOWE-WOODWARD, Inc.

Craftsmen in rubber rolls

NEENAH, WISCONSIN • NEWTON 64, MASS. • GRIFFIN, GEORGIA

 For more information, write direct or use Reader-Service post card.



Top for Strapping Table

A top for a strapping table that lets an operator stand in one position while rotating heavy containers for packing or strapping is available from Signode Steel Strapping Co., 2600 N. Western Ave., Chicago 47, Ill. Heavy containers can be handled with little effort.

The table top is made of metal and contains 61 ball casters 1 in. in diameter. The casters extend ¾ in. above the table surface and are mounted in a staggered pattern on 3-in. centers. The over-all size is 36x36 ins., and the weight is 37 lbs.

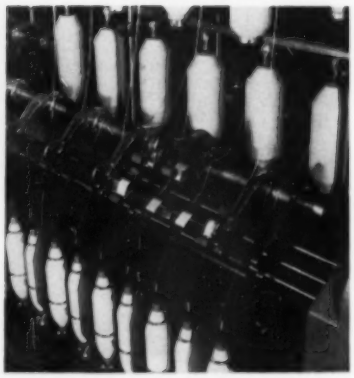
Circle T-11 on Reader-Service Card

Cotton Spinning Frame

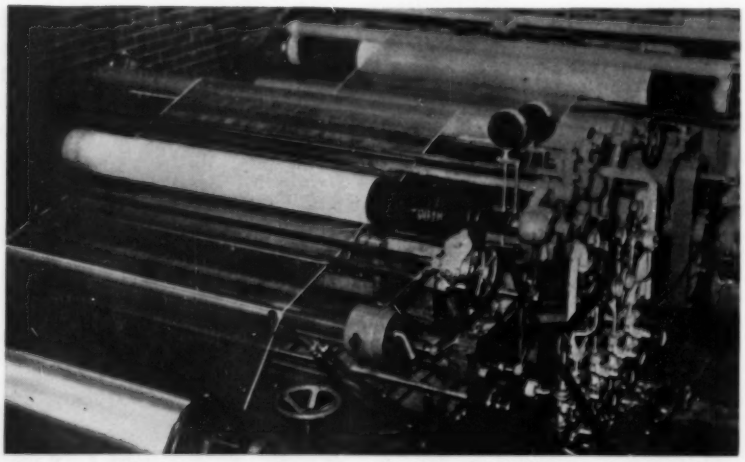
A cotton spinning frame with movable spindle rails has been announced by Joh. Jacob Rieter & Co. Ltd., Winterthur, Switzerland, through its agent, American Rieter Co., Arlington, N. J.

The combined movement of the descending spindle rails and the separately controlled ring rails permits the cops to build at practically constant balloon height and compensated yarn tension. Ballooning is restricted by two antiballoon rings that permit high speeds with minimum ends down.

A double-apron guide-saddle drafting system, with pneumatic loading of the ball-bearing top rolls, permits drafts up to 50. A 10- to 11¼-oz. bobbin is produced. The frame, especially suitable for spinning coarse numbers, is of rugged construction and is said to require little maintenance.



Circle T-12 on Reader-Service Card



Slasher Without a Dryer

A slasher without drying cylinders or a hot-air drying oven has been developed by Hettwer & Co. (Texma K.G.), Micheldorf, Austria. The slasher is designed to size synthetic fibers. The machine uses a wax-like size with a melting point of 170° F. The size mixture contains no water. The size contains a detergent, and consequently the woven cloth can be desized easily before it is finished.

The yarn to be sized comes from creels under tension in the usual way. The machine has two size boxes, and the size is held at 205° F. The heated size is a water-thin liquid.

Two size boxes are used. The yarn can pass through both boxes or through only one, depending on the amount of size required in the yarn. Each size box has an immersion roll and a rubber-covered top roll. The top roll is pneumatically loaded.

After the warp passes through the size boxes, it is run through two additional rolls, which act as a gentle frictional calendering operation. Then the warp is cooled in the normal air between the calendering rolls and the loom yarn beam.

The slasher runs at 500 ft. per min. on single yarns and 150 ft. per min. on ply yarns.

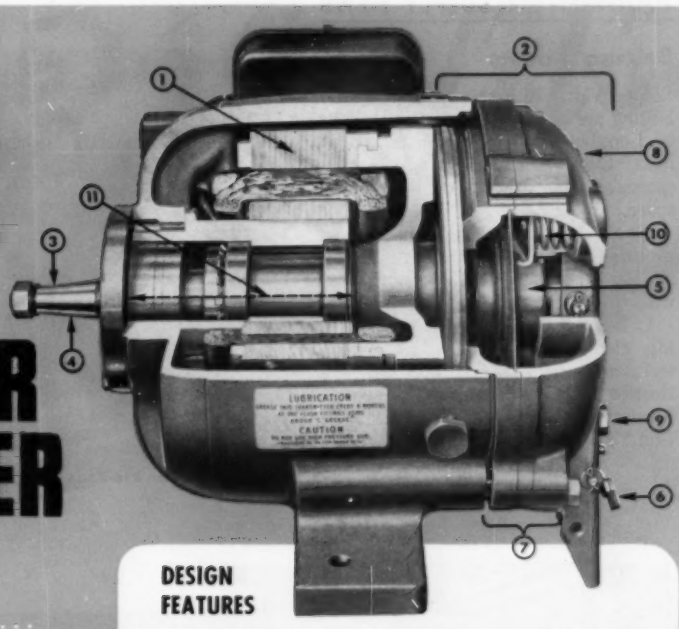
Circle T-13 on Reader-Service Card

Here it is!

THE NEW DIEHL "BA" POWER TRANSMITTER

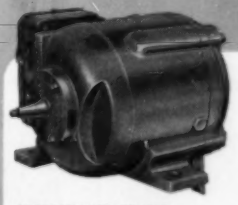
For Draper Looms

Exclusive new design features mean . . . *consistent* quality production . . . *peak* operating efficiency . . . minimum maintenance, labor and costs!



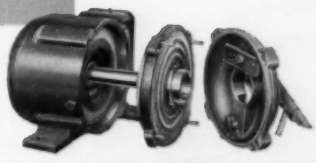
DESIGN FEATURES

*1. High inertia inverted motor provides "stored energy" for smooth, fast starts and positive picking (maximum inertia with minimum size) . . . prevents regeneration.

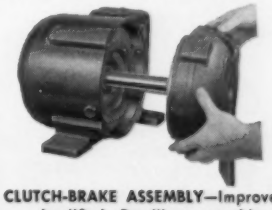


STREAMLINED FRAME
Easy to clean. Roomy terminal box.

KINETIC BRAKING ACTION
(See Feature 6)



CLUTCH-ACTUATING BEARING—A strikingly new and improved method of mounting. (See Feature 5)



CLUTCH-BRAKE ASSEMBLY—Improved, simplified. Readily removable as a unit. (See Feature 2)

plus these outstanding New Features

*2. **CLUTCH-BRAKE ASSEMBLY**—Improved and simplified for positive action and ease of adjustment. Removes readily as unit for maintenance, without disconnecting motor from loom frame.

3. **PINION**—Free accessibility for installation and maintenance.

4. **SHAFT**—Large diameter, alloy steel, heat treated—assures long life, eliminates need for outboard bearing.

*5. **CLUTCH-ACTUATING BEARING**—New diaphragm mounting for frictionless clutch action, positive radial rigidity of bearing . . . eliminates fretting corrosion . . . means full self-alignment of bearing for maximum life.

*6. **KINETIC BRAKING ACTION**—For rapid, accurate stops. Particularly desirable for center fork detection looms.

7. **CLUTCH AND BRAKE ADJUSTMENT**—Simple and convenient. Provides visible check on brake alignment.

*8. **CLUTCH-SETTING INDICATOR**—Built integral with unit for instantaneous external checking of clutch setting.

9. **SAFETY LATCH**—Built integral with unit. Prevents accidental engagement of clutch.

10. **CLUTCH-LOADING ASSEMBLY**—Internally located, hence tamper-proof.

11. **SHAFT-END BEARINGS**—Arrangement simplified and improved. Two ball bearings and an extra large roller bearing assure maximum life.

** Exclusive feature—patent protected.*

The original and only loom power transmitter . . . plus many new and outstanding design and construction features never before incorporated in a loom drive!

Over 40,000 Diehl Power Transmitters have been in continuous operation on DRAPER LOOMS—*most of them more than six years!* The new "BA" Power Transmitter is even *more* compact, more streamlined, *more* efficient and *more* easily installed and serviced than its famous predecessor.

It's an inverted-type high inertia motor combined with a fast, positive clutch-brake mechanism. Note the exclusive new design features—the clutch-actuating bearing mounting . . . the kinetic braking action . . . the unitized clutch-brake assembly. These important advancements mean increased production . . . improved cloth quality . . . lowered operating costs . . . fewer shutdowns. *Write, wire or phone today for full information.*

Diehl

DIEHL MANUFACTURING COMPANY

Electrical Division of THE SINGER MANUFACTURING COMPANY

Finderne Plant, SOMERVILLE, NEW JERSEY

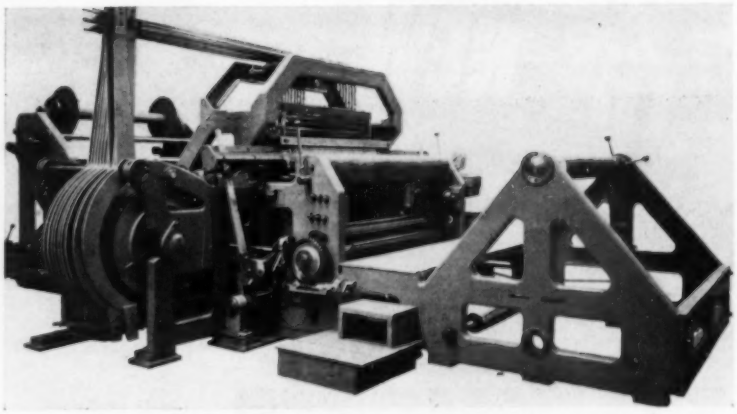
ATLANTA • BALTIMORE • CHARLOTTE, N. C. • CHICAGO • CINCINNATI • DETROIT • MILWAUKEE • NEEDHAM, MASS. • NEW YORK • PHILADELPHIA • PITTSBURGH

Belting Looms

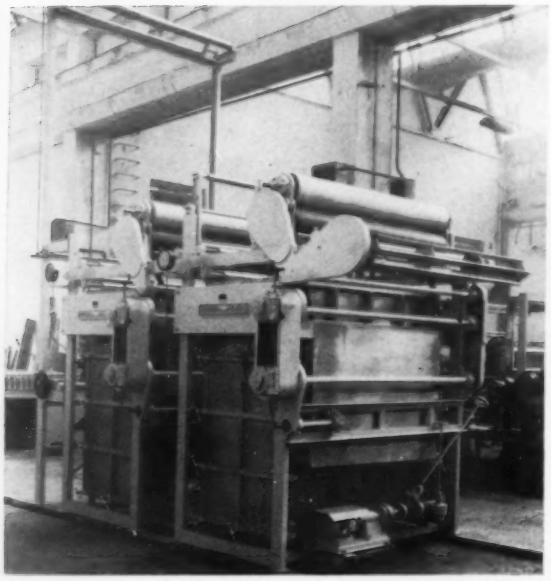
Two widths of looms to weave fabric belting are being produced by Wilson & Longbottom Ltd., Barnsley, England. One loom has a 42-in. reed space, and the other has a 50-in. reed space.

The looms have side-tappet harness motions. The let-off motion is available in sections, and up to six beams with 36-in. beam flanges can be used.

Other features are: side-lever picking, electromagnetic drive and brake, worm-and-wheel take-up motion, 29-in. shuttle for a 17-in. solid cop, central lubrication, and coil-spring frog motion. The speed is 90 to 96 ppm.



Circle T-14 on Reader-Service Card



Cloth-Washing Machine

A scouring or afterwashing machine that subjects the fabric to a rapid beating action without tension has been developed by Share Co., Mezzera, Milan, Italy. The scouring action of the machine is efficient but gentle. The unit is capable of high production and occupies little space.

Circle T-15 on Reader-Service Card

Steel Workbench

A workbench for section men or maintenance mechanics is being manufactured by Bennett Rose Co., P. O. Box 8, Roebuck, S. C. The workbench is all steel except the top, which is 2-in.-thick first-grade pine. A 2-in. guard rail surrounds the two ends and back side.

The standard-size workbench is 7 ft. long, 28 ins. wide, and 35 ins. high. It is also made to other specifications. The 12 drawers are 19⅜x8x26 ins. Each drawer is mounted on ball-bearing tracks and is equipped with a flush-type lock.

The cabinet of the workbench and the drawers are made of 20-gauge steel with steel angle-iron frame. The front of the drawers is 16-gauge steel. The workbench may be stationary or mounted on casters.

Circle T-16 on Reader-Service Card

INCREASE *Profits*
Your XD Loom

With Southern Shuttles

Eye #900-11 with rear tension and Nyloc.

Eye #900 P with single tunnel.

Eye #900 PW two tunnel.

There Is No Better Shuttle Made!

Southern Shuttles are made of the finest quality selected dogwood . . . Tempered by Southern's exclusive process to prolong their life. XD Shuttles are covered with the best quality fibre or Stehide for increased performance and wearability . . . bonded with high frequency process to give greatest strength.

Magnum type tips with reverse taper insure positive holding . . . produced from toughest alloy steel with points induction hardened to retain original shape.

Grips are produced in our plant . . . under rigid quality control standards to eliminate breakage and wear.

Tension eyes are engineered for fast and positive threading . . . Southern offers advantage of interchangeable plain eyes both single and double tunnel for spun and novelty yarns.

Milled groove tension pads as illustrated insure first pick tension . . . positive tension adjustment maintained by exclusive "Nyloc" feature. Hard chrome plated pins and positive locking nuts . . . used throughout assuring trouble free service.

Uniformity of every shuttle guaranteed . . . by quality control methods and numerous inspection procedures. Each employee trained to be "Quality Conscious".

Long established warranty . . . against defects in material and workmanship proves their superiority.

Stehedco
STEEL HEDDLE MFG. CO.
PHILA. 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S. C.
Southern

TEMPERED

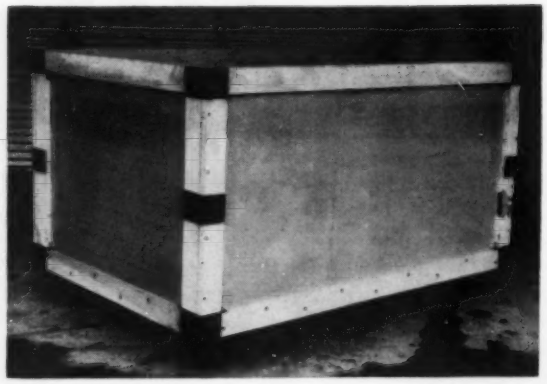
QUALITY Stehedco CONTROL

STEHIDE

World's largest manufacturer of all type Shuttles • Comparison made them famous

Other Plants and Offices: Granby, Quebec, Canada—Lawrence, Mass., Providence, R.I.
Greensboro, N.C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas
Albert R. Breen, Chicago, Ill.

6-S-56



Finishing-Plant Trucks

Trucks to handle wet goods in bleacheries, finishing plants, and dyehouses have been announced by Bennett Rose Co., P. O. Box 8, Roebuck, S. C. The trucks are made of marine-plywood panels inside maple framing.

Solid-brass fasteners prevent rust or corrosion; therefore, wet materials can be handled without danger of being soiled. The smooth inside surface of the plywood also prevents snagging the cloth.

The standard-size truck is 70 ins. long, 48 ins. wide, and 33 ins. deep. It is also made to other dimensions. The truck is built sturdy to carry heavy loads.

The corner bumpers are of rubber-faced steel. The end casters are 6-in. hard-rubber roller-bearing swivel wheels. The center wheels have vulcanized-rubber tires and roller bearings and are mounted on cold-rolled-steel axles.

Circle T-17 on Reader-Service Card

Stretch-Yarn Machine

A new machine for producing stretch yarn by a continuous process is made by Valco Machine Co., 109 35th St., Union City, N. J. The machine uses no belts or pulleys or motorized spindles to result in a clean yarn and a minimum of machine maintenance.

The take-up is in the form of a 3-lb. pineapple package that can be directly knitted. Each take-up is individually tapered to permit a new package to be started at any time.

The patented false-twist spindle is designed so that all parts in contact with the yarn are readily and inexpensively replaced.

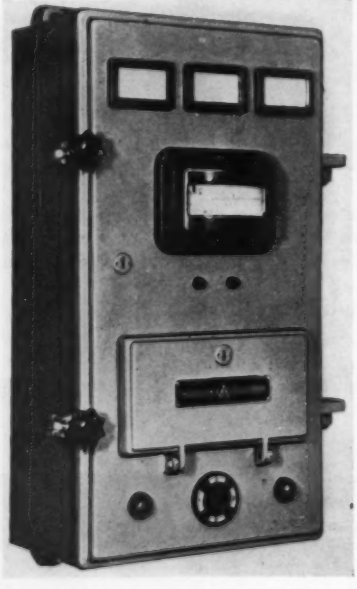
The heater element is readily accessible for threading and cleaning. It is virtually indestructible and designed so that there can be no variation in temperature from one unit to the next. The heat can be electronically controlled.

Threading up of each position is a matter of a few seconds, and one operator can handle 4,000 spindles. The machines are produced in 64-spindle units.

The rate of production is 3 lbs. per spindle per week, based on 70-den. 34-filament nylon. The total power consumption is 6.75 kwh. per lb.

The machine will handle yarns from 20 den. up. Spun yarns in the form of singles are run on the machines. A constant twist can be maintained.

Circle T-18 on Reader-Service Card



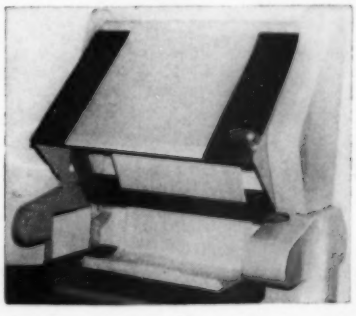
Moisture-Content Control

An automatic control for the moisture content of fabrics and warps coming from textile dryers and slashers is being manufactured by the Mahlo Electro-Mechanical Works, Germany. The control is being introduced in the U. S. by Cosa Corp., 405 Lexington Ave., New York 17, N. Y.

The control, called Textometer, automatically controls the speed of the machine so that emerging material always has the desired amount of moisture. The slightest deviation from the set moisture percentage is immediately corrected without overcompensation.

The instrument is claimed to permit faster machine speed, greater production, and more-efficient steam consumption and power utilization.

Circle T-19 on Reader-Service Card



Inspection Machine

An inspection machine designed for examining silk and rayon fabrics has been marketed by G. Durrant & Sons Ltd. Called the Comet Mark II, the machine delivers the cloth in folds to a scray below the perch. R. J. Dealey & Sons, 263 Summer St., Boston, Mass., is the U. S. agent.

Circle T-20 on Reader-Service Card

CONTINUED ON PAGE 202

TROUBLE LOOMS!

Trouble looms for the textile man who, in his search for a clear lubricant has settled for an oil which permits excessive friction.

Not only can this friction result in costly breakdown, it also greatly raises power costs. And these same power costs already account for 10% of the average mill's selling price!

Fortunately, Cities Service has the answer to both the clear-lubricant problem and high power costs. For the fact is, every one of the seventeen different Cities Service Glade Oils has unsurpassed clearness and is designed for a precise lubrication job, minimizing friction, oxidation, and power consumption.

Whether it's spindle bearings, rub rolls, carding "aprons," comb boxes or sewing machines—Cities Service has the solution to any lubrication problem. For more information, write Cities Service Oil Company, Sixty Wall Tower, New York 5, N. Y.

CITIES SERVICE

QUALITY PETROLEUM PRODUCTS

NEW DYES and CHEMICALS

Nylon Emulsion

BCl Nylon Dispersion . . . Made from Type 8 nylon, this product can be applied to yarns and fabrics by dipping, coating, or spraying. The dispersion is suitable as a bonding agent for nonwoven fabrics and as a finish for woven or knitted fabrics where increased abrasion resistance and tensile strength are desirable. Belding-Corticelli Industries, 350 Fifth Ave., New York 1, N. Y.

Circle D-1 on Reader-Service Card

Chelating Agents

Perma Kleer 80 Crystals . . . a nonhygroscopic chelating agent that will not cake on storage. The product forms stable chelates with all divalent metal ions and most trivalent metal ions. Ferric ions are chelated in acid and neutral media. Refined Products Corp., Lyndhurst, N. J.

Circle D-2 on Reader-Service Card

Metallized Dyes

Lanasyn Yellow GLN p.a.f. . . . higher migration power than the earlier type is claimed for this dye, recommended for wool, silk, and nylon. Fast shades of bright yellow are produced by the dye, which is also suitable for vigoureux printing.

Circle D-3 on Reader-Service Card

Lanasyn Red BL p.a.f. . . . produces bluish-red shades on wool, silk, and nylon. Can be used for vigoureux printing. Valuable as a toner in beige and gray shades. Sandoz Chemical Works, 61-63 Van Dam St., New York 13, N. Y.

Circle D-4 on Reader-Service Card

Dispersing Agent

Dispersinol C . . . an anionic material recommended for union dyeing of Dacron-wool blends or other combinations of synthetic and natural fibers. Light shades require 1 to 2% of the material; dark shades may need 3%. Solutions of Dispersinol C have a pH of 5.8 to 6.0. Arkansas Co., Newark, N. J.

Circle D-5 on Reader-Service Card

Pigment Toner

Cyan Green Toner 15-3100 . . . a phthalocyanine-green toner of high strength and excellent stability to light. Recommended for blending with suitable yellow pigments to produce stable shades of green. The toner does not bleed in organic media and is stable to acids and alkalis. American Cyanamid Co., 30 Rockefeller Plaza, New York 20, N. Y.

Circle D-6 on Reader-Service Card

Polyurethane Binder

Arcco C 518 . . . a liquid adhesive for bonding polyurethane foams to textiles or paper. The product is supplied in brush viscosity but may be thinned for spraying. Borden Co., Resinous-Reslac Dept., 103 Foster St., Peabody, Mass.

Circle D-7 on Reader-Service Card

Nylon-Resin Dispersion

Genton 110 . . . Zytel 61 nylon resin is used in this product to make a 10% dispersion at pH 6.8 to 7.2. Textile applications include yarn and fabric finishing to give increased abrasion resistance and improved hand. The resin can be used on cotton, rayon, nylon, and other fibers to give improved resistance to oxidation and hydrocarbons. General Dispersions, Inc., 165 Third Ave., Paterson, N. J.

Circle D-8 on Reader-Service Card

Anionic Softener

Softex 595 . . . a nonoxidizing white paste easily dispersed in water. Recommended for finishing yarn or fabrics, to which it imparts a soft hand. The product is hygroscopic and is inhibited against mold growth. E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Pa.

Circle D-9 on Reader-Service Card

Latex Coating

Rubbatex Rubber Fiber Coating . . . is designed particularly for rubberizing felt pads, hair felt, and wadding. The product is nonflammable and self-vulcanizing and can be air- or oven-dried at low temperatures. Rubba, Inc., 1015 E. 173rd St., New York 60, N. Y.

Circle D-10 on Reader-Service Card

Mildewproofing Compound

Cotton fabrics will retain 95% of their strength after 14 weeks' burial in bacteria-laden soil when they are treated with a copper compound developed by National Cylinder Gas Co., 840 N. Michigan Ave., Chicago 11, Ill.

The product forms a stable copper-cellulose complex that changes the structure of the cellulose molecule without affecting fabric hand or imparting any odor.

The treated cotton withstands weathering and sunlight better than untreated fabric, and the antimicrobial effect is retained after washing with water or solutions of ammonia.

Fabrics develop a light tan color when they are treated with the preservative, but this color can be almost entirely removed if necessary. Dyeing characteristics are not affected greatly; and finishing treatments such as water repellents, resins, flame retardants, fillers, or coatings can be applied as usual. The preservative is applied from water solutions.

Cotton treated with the compound is not a skin irritant or a sensitizer and is therefore suitable for garments.

(Advertisement)

Throwsters Follow New Trends with Stantex

by J. H. Callicott, *Sales*, Greensboro, N. C.

Throwsters today are adopting new methods or have under test procedures applicable to all types of synthetic yarns to provide knitters with improved yarns, especially for the full fashioned hosiery, seamless hosiery, and half-hose industry with special reference to the newer type bulk yarns. All these yarns have a definite place in the knitting field. Much interest, too, is being shown in combinations of these yarns with cotton and this should be of interest to knitters, as the use of multicombination yarns enhance the effect of different patterns which is of so much importance in the half-hose and anklet field.

With machinery manufacturers supplying more modern and better equipment and along with the latest developments in STANTEX® processing oils and their more efficient application, we believe that knitters will be looking for better knitting yarns.

The characteristics of STANTEX processing oils for synthetics are being improved, particularly with reference to frictional properties and yarn relaxation. This results in less tension and better cone build-up, with proper density for good knitting. STANTEX coning and processing oils resist oxidation, do not discolor and are easily removed in normal wet processing.

Standardgrams

Stantex Processing Oils Provide High Lubricity and Static Control

In sizing multifilament nylon hosiery yarns, the correct procedure after twisting and setting is to take the yarn to the sizing area for application of size. Then later at coning the sized yarn is oiled with coning oil to provide lubricity, anti-static control and good cone formation for quality knitting performance. Much work is now in progress, with very favorable results, in the application of a combination of size and oil in one operation at the coning machine. This is accomplished by mixing special STANTEX oils with size and enough water for proper viscosity control and applying at the coning operation.

It is necessary to use a circulating system on the coning machine which should also be equipped with a viscosimeter to control properly the viscosity. The percentage applied varies according to requirements, but the range of application is usually 2% to 4%. The oil-size mixture makes an excellent film and knitting results have, in general, been most favorable. The STANTEX oils used in this process are especially made for size stabilization. After applying the oil and size by this method, the yarn can be either air dryed or force dryed prior to knitting. By eliminating the sizing operation, a reduction in cost is obtained while still maintaining good knitting performance.

Our staff offers technical assistance and information on STANTEX oils for throwsters, weavers and knitters. Let us discuss your problem at your convenience.

New Applications for Mill-Proved Oil

Mr. Mill Superintendent, STANTEX 1032 is an oil for which you will have many uses in your various applications. It has been mill-proved over many months for the following oiling and finishing purposes:

1. Coning dyed filament nylon yarn.
2. Finishing off muff-dyed nylon.
3. Fifteen denier nylon stretch yarn.
4. Coning dyed acetate and viscose yarns.
5. Finishing skeins or packages of dyed acetate and viscose yarns.
6. Coning dyed spun acetate yarns.
7. Coning preshrunk seamless welt nylon yarns.
8. Nylon-cotton combination yarns.
9. Cop yarns.
10. Sized multifilament nylon yarns for knitting.

Let us send you a sample of STANTEX 1032 along with processing information for your particular problem. Its low cost and high efficiency will afford excellent processing.

STANDARD CHEMICAL PRODUCTS, Inc.

HOBOKEN, NEW JERSEY · CHARLOTTE, NORTH CAROLINA

CHATTANOOGA, TENN. · PATERSON, N. J. · SWANSEA, MASS. · SALISBURY, N. C.

SUNBURY, PA. · SACRAMENTO, CALIF. · GREENSBORO, N. C. · GREENVILLE, S. C.

NEW TWISTS in stretch yarn processing

Universal aids your stretch yarn processing in three important ways

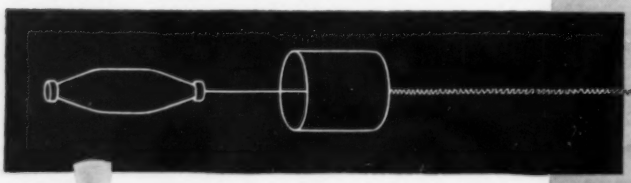
To aid you in producing top quality stretch yarns, with top sales potentials, Universal brings you:

1. *Special Leesona Machines,* developed for fast, cost-cutting production of all the popular new bulk and stretch yarns.

2. *Universal's Yarn Evaluation Department,* which has been established to: set up standards for processing and testing stretch yarns; provide mills with samples; suggest test procedures and appraise samples from mills; and check market possibilities for new products.

3. *Easy Financing,* through the Leesona Pay-As-You-Profit Plans for long-term purchase or lease of new machines without impairing your working capital.

The new "magic" yarns produced on Leesona special machines are used in many types of garments for men, women and children. Typical samples are shown at right. For further facts on Leesona machines and Universal's complete stretch yarn service, see your Universal representative or write direct.



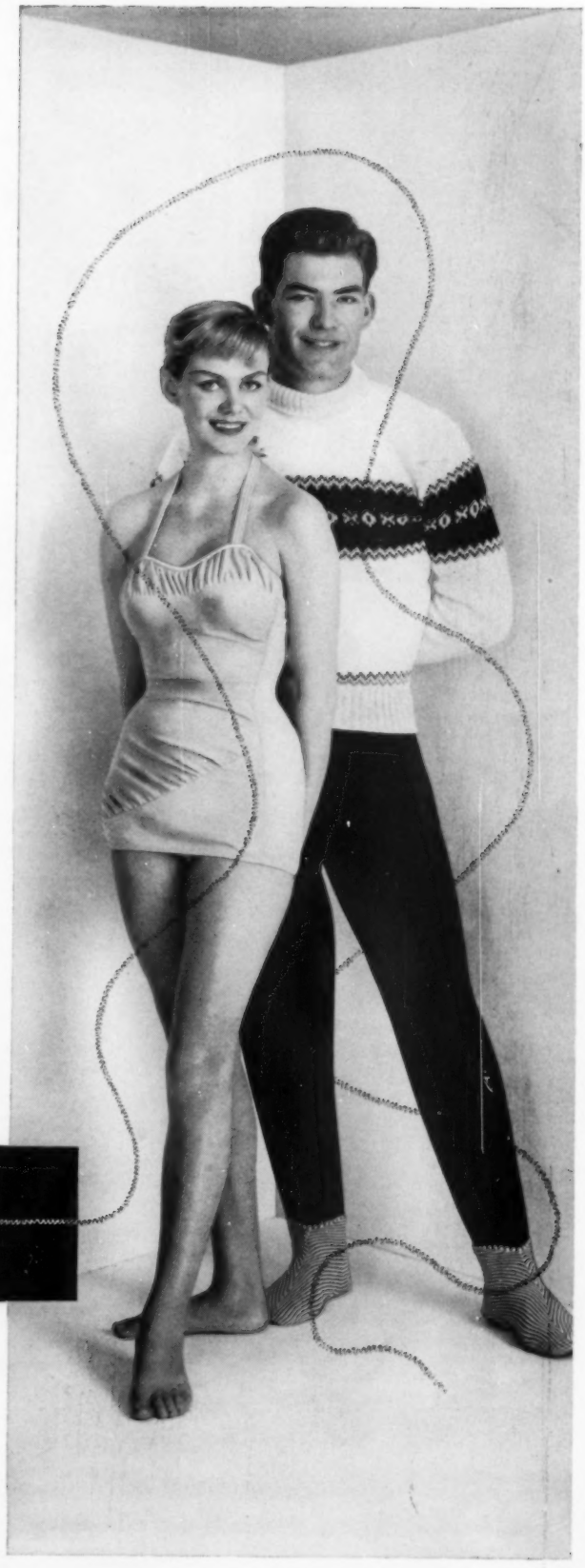
23.8.32

LEESONA

UNIVERSAL WINDING COMPANY

P. O. BOX 1605, PROVIDENCE 1, R. I.

Sales Offices:
Boston • Philadelphia • Utica • Charlotte • Atlanta • Los Angeles
Winding and Twisting Machinery for Natural and Synthetic Yarns



QUESTIONS and ANSWERS

►TEXTILE WORLD'S editors are at your service to help solve your problems in yarn manufacture, weaving, knitting, dyeing, finishing, or other textile operations. If you have a technical problem bothering you, send it along to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

How To Allow for Twist In Yarn Diameters

Technical Editor:

How can the yarn-diameter tables on page 9, TEXTILE WORLD, Mid-Sept., 1955, be used when different twist multipliers are run? (9949)

You can make your own charts and tables along these lines.

1. Line up all your yarn numbers. Keep the ranges of the same twist-multiplier group separately.

2. From each group take one yarn, and wind the yarn on a spinning bobbin. Cover a 1-in. length of bobbin with coils. Use a tension that you think permissible, and do not crowd the coils too much.

3. Count the coils per inch.

4. Enter the number of coils in this formula:

$$\text{Yarn diameter} = \frac{1}{\text{Coils per inch}} = \frac{X}{\sqrt{N}}$$

X = Constant for the particular twist-multiplier range group

The constant for nylon in the table is 0.0410 for all yarn numbers. Your different range groups may show a slightly different constant.

Keen Is Card-Fillet Angle

Technical Editor:

What is meant by the term keen that is used for card clothing? (9968)

The keen is the angle where the wire on a carding fillet is bent at the knee to bring its point in advance of its base position in the foundation.

All-Cotton Yarn May Be Stronger Than Nylon

Technical Editor:

We are spinning 60s yarn from 0.5-den. nylon with 1½-, 2-, and 2½-in. staple on cotton equipment. These yarns all have the same strength, and the strength is no higher than yarn spun from Karnak cotton. What nylon should we use to get added strength? (9959)

Yarns finer than 60s, spun on the cotton system from Sea Island and the finer varieties of Egyptian cotton, can be stronger than equivalent-size yarns spun from nylon staple. Fiber surface characteristics account for some of the difference in strength.

Where the proper variety of cotton is used, you cannot improve the strength of very-fine yarns by substituting current commercial nylon-staple fibers. You will, however, get the best results in 60s yarn if you use 1.5-den. 2½-in. nylon staple.

Polyacrylate Prevents Jersey-Fabric Curling

Technical Editor:

When plain jersey fabrics are cut up one side to be processed in the flat state, the edges tend to curl back. What can we do to prevent this curling? (9952)

One circular knitting mill fixed up a device on a dryer to do the job. The selvages are run through two pairs of rolls at each selvage. Between the rolls is a trough containing a polyacrylate emulsion. Above the top roll is an electric heating rod to dry the selvages. The cloth moves upward through this setup to the dryer.

Tricot finishers tackle the problem on the tenter frame by placing a bath with a roller on the side of the pins nearest the cloth underneath the cloth. The cloth moves the roller, and an emulsion is transferred to the cloth. The cloth goes through the setting or heating unit, and the edges are trimmed off with a circular knife; but the treated selvage, which is now hard, remains.

Spare Spindle Used For Winding Waste

Technical Editor:

On the back page of TEXTILE WORLD, Sept., '55, is a picture of a row of spinning frames. Single spindles are mounted on the end brackets of the frames. What are these spindles for? (9932)

All spinning rooms make bad bobbins of yarn that have to be thrown into waste. Some mills permit this bad yarn to be cut off the bobbin; others require that the yarn be pulled off. Sometimes a spinner lets a doubling run for several layers on the bobbin, and this yarn has to be pulled off.

The fastest and easiest way to pull yarn off a bobbin is to start the end winding off the bobbin onto a spindle. All the spinner has to do is start the yarn winding on the bare spindle, hold the bobbin of yarn with the top of the bobbin toward the spindle, and then pull the lap of yarn off the spindle when she's through.

Some mills use a regular spinning spindle for this purpose. The mill in the picture apparently has a spindle mounted on the frame at the motor end. When there is bad work to be cleaned up, a drive band can be placed around the unused middle drive sheave and around the spindle whorl to drive the spindle.

Reverse Satin If Warp Breakage Is High

Technical Editor:

We are weaving 57-in. satin with five shafts 4 over 1. The warp is 18/1 50-50 rayon-acetate spun from 2⅜-in. staple. The filling is the same yarn with 56 ppi. Our relative humidity is 65%, but we are having too much warp breakage. What can we do? (9969)

Because of the many variables such as yarn strength, loom speed, and loom settings in weaving, anything we

CONTINUED ON PAGE 189

Cottons resist wear or wrinkles even more with RHONITE R-1 *and* RHOPLEX

Everybody knows that the best things come in pairs! So our wise little owls are now teaming up RHOPLEX acrylic resin with RHONITE R-1 for better-than-ever cottons or cotton blends. As the fabric requires, RHOPLEX acrylic resin can be added to produce

- ***better* wrinkle resistance with *equal* fiber strength**
- **or, *equal* wrinkle resistance with *superior* fiber strength.**

Chemicals for Industry

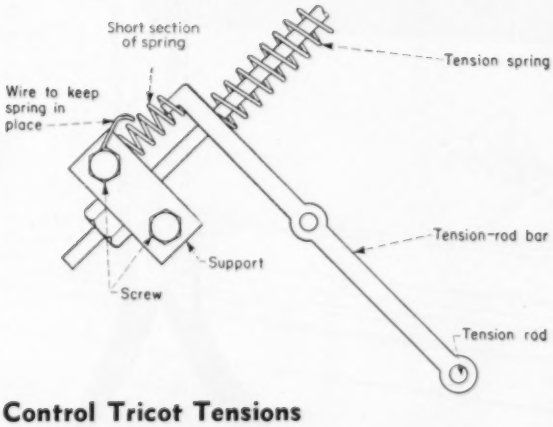
ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

RHONITE *and* RHOPLEX *are trade-marks, Reg. U.S. Pat. Off. and in principal foreign countries.*

KINKS and SHORT-CUTS



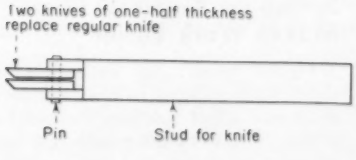
Control Tricot Tensions To Knit Loose Fabrics

To get 15-den. tricot with the high yield the market requires today, the fabric must be knitted very loose. We found the conventional means of getting this high yield, such as advancing the sinker bar, were not sufficient. The following idea helped us a lot on both the old-type Reiner machines with the brake let-off and on the new type with the transmission.

The machines were delivered with two types of tension springs. We used the heavier spring at the conventional place above the tension rod. A short section of the lighter spring was placed at the back of the tension rod between the tension-rod support and the tension-rod bracket.

We could then lengthen the runners and fabric lengths and still reduce yarn fluttering, especially at the outsides of the warp. The swing of the tension bar was cushioned and reduced. The controls that advance or slow the warp transmission, which are activated by the swing, had to be reset.

To prevent the sections of the lighter springs from jumping out, we took the worn spring holders of the guide bar and cut and bent them. We slipped one of the screws, which hold the tension-rod support in place, through the hole that usually holds the spring and fastened the spring holder so that the bent part was behind the short section of the spring to keep it from jumping out. (K-2973)



Two Thread-Cutter Knives Reduce Jerk-Backs

One of the major defects in our fabrics woven on Crompton & Knowles S-6 looms is jerk-backs made at bobbin transfers. We have eliminated many of these jerk-backs by rearranging the setup for the cutter knife in the stud for knife.

When the stud for knife comes to us from the loom manufacturer, it has only one cutter knife. When the cutter knife becomes worn, we remove the pin in the stud and then remove the cutter knife. We grind two new cutter knives down to one-half thickness and put both the knives in one stud.

The two cutter knives in one stud give double cutting action. If one knife becomes dull, the second knife still cuts the filling. And since we have two knives cutting the filling yarn most of the time, we can set the knives less than the standard depth on the shuttle plate and still get good cutting action. Consequently the knives wear longer before they become dull.

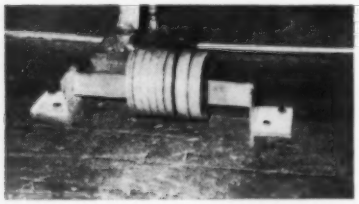
The cutter knives cost only a few cents each, and it requires only a few minutes to grind down several knives at once and place them in the studs to be held as extras. (K-2890) *Charles R. Batzer, Lancaster, Pa.*

Polish Doffer Comb With An Old Slubber Apron

To clean and at the same time polish the edge of the doffer comb on our cards, I use an old leather slubber apron like a barber uses his razor strap. Here's how to do it:

Stop the doffer, but leave the comb reciprocating. Then insert the apron with the smooth side next to the doffer. Hold both ends of the apron and work it up and down and across the comb several times.

This action will clean and polish an old comb quickly. The quality of the web will be improved, and many old combs that ordinarily would be discarded can be kept in operation. This little trick is very useful to me in my work as a card grinder. (K-3000) *Calvin L. Hamby, Rhodiss, N. C.*



Stands for Loom Weights Keep Weave Room Orderly

Loose loom weights on our weaveroom floor have caused several accidents in our mill. All the accidents were minor ones, but serious accidents could occur just as easily. Weavers step on the weights, and the weights slip; then weavers fall.

We made simple and inexpensive stands from scrap iron to hold the weights. The stands are made from 3-in. angle iron and 2x½-in. flat steel stock.

The angle iron is cut in sections 3 ins. long. Two holes 7/16 in. in diameter are bored diagonally on one side of each piece of angle iron. The flat steel is cut in pieces 12 ins. long.

Then the flat steel is welded upright between two sections of angle iron, with the holes of the angle iron down, to form a stand. The stands are fastened to the floor near the loom feet at automatic let-offs. The fasteners are 1½x⅜-in. lag screws.

Extra weights are stored on the stands. Weavers can select the size of weight needed immediately. Now all weights are arranged orderly, and accidents have stopped. (K-2653) *Eugene P. Schremp, Bristol, R. I.*

Counter on Conveyor Double-Checks Shipments

We have a skate-wheel roller-conveyor system to remove packages from the shipping room to the trucks. We manually check off each package but found that we easily could make a double-check by mounting a counter on one of the conveyor sections to assure extra accuracy.

The operating lever of the counter projects above the conveyor wheels. As the packages flow down the conveyor, they press on the lever. At the completion of an order, we check the figure on the counter against the figure on the invoice. (K-2966)

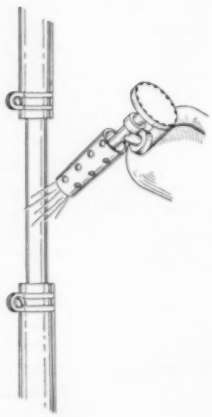
Best-Kink Award for April

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answers in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for April, according to TEXTILE WORLD reader-judges was:

"Overhead Curing Oven Saves Floor Space"
By R. B. Taylor, Greenville, S. C.



Heat Compressed Air To Prevent Condensation

We periodically blow out our piping system with compressed air to clean the pipes. On occasions, we have had moisture from the air condense inside the pipes and dilute or contaminate the material carried by the pipes.

We solved the problem by clamping a 2-ft. length of metal tubing in the air hose, as illustrated, and heating it with a blow torch. A steam jacket can be used also.

The air is dried as it passes through the hot metal section, and no more condensation forms in our pipes. (K-2812)

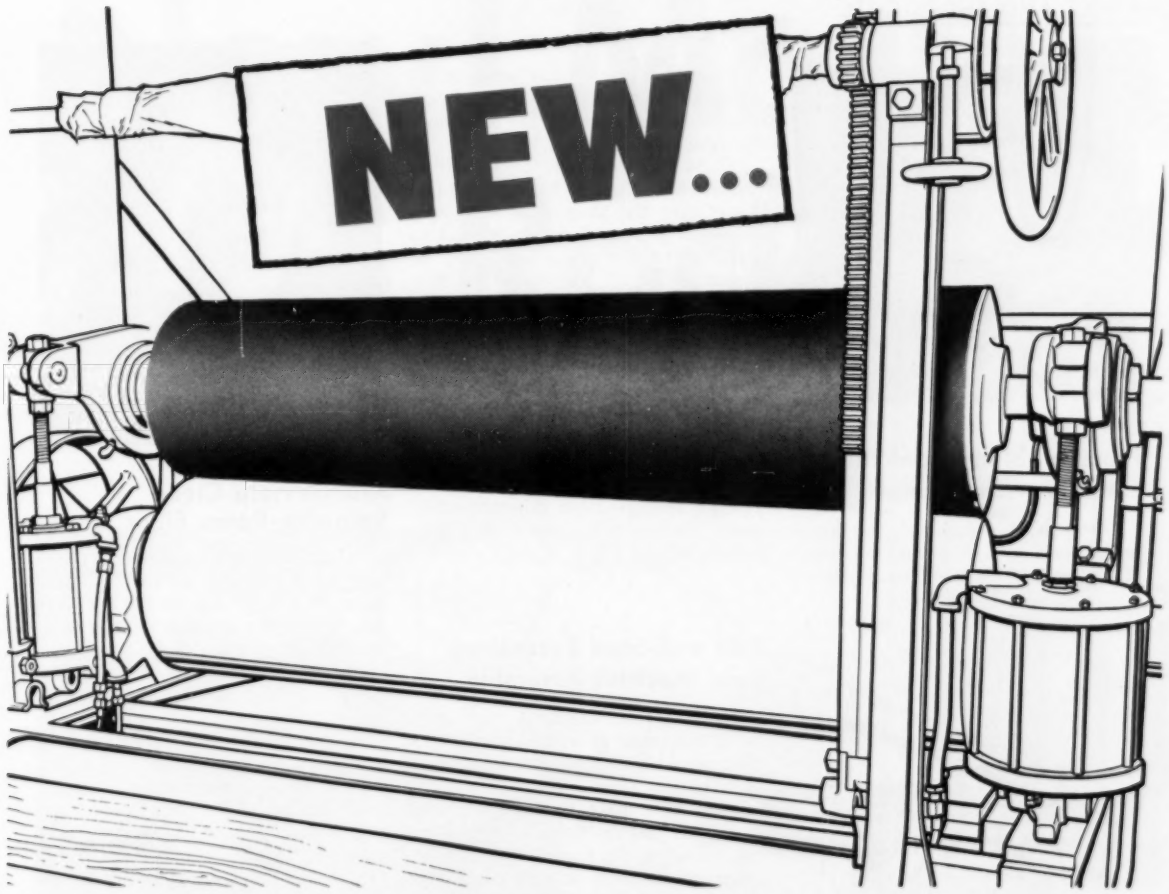
$5 to $10 for any Kink accepted for publication. Each one will be entered in the $25 and $500 prizewinner contest.
Send in your Kink now.

Spring on Knitters' Pliers Makes Work Easier

Dental pliers and some pruning shears have a spring to open the jaws. Why not adapt this idea to knitters' pliers? The work done with this tool is generally precise, and the jaws must be opened by the third finger while the handle lies in the palm of the hand.

If the jaws are opened too wide, you must move the finger to bring them back. You soon get adept at this job and do it as a habit, but you'll find the job easier if you place a spring between the handles.

Drill two small holes in the wide part of the handle and fit a compression spring between the holes to push the handles apart and open the jaws. (K-2916) *H. J. Haas, Martinsburg, W. Va.*



Dayco Finishing Rolls

Reduce change-over, clean easily

Now, the *all-new* Dayco Finishing Roll--introduced after more than a decade of research and testing by Dayton Rubber, leader in rubber technology—will improve your finishing operation, reduce your costs.

Dayco Finishing Rolls, the finest for dyeing, coating, calendering and every other finishing operation, are the result of years of experience in producing both textile products and rolls for printing and steel mill use. Skilled roll technicians "job engineer" each Dayco Finishing Roll to meet your requirements, using special high tensile compounds prepared under the most rigid quality controls.

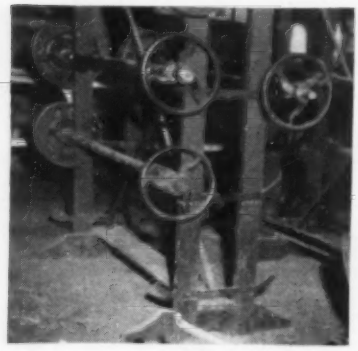
Building rolls specifically to take the pressure, heat and chemicals you use in your operation reduces the frequency of grinding and costly change-over, besides cutting recovering costs. In addition, Dayco Finishing Rolls clean easily with your usual solutions, save machine down-time by keeping cleaning time to an absolute minimum.

Highly important, you'll get speedy, economical roll covering service from the convenient Dayton plant in Atlanta, Ga. Contact your Dayco Roll Engineer for information on any roll problem. For the complete details about New Dayco Finishing Rolls write The Dayton Rubber Co., Holfast Div., 1486 Lakewood Avenue, S. E., Atlanta, Ga.

© D. R. 1956

Dayton Rubber 51 YEARS OF PROGRESS

DAYCO ROLLERS . . . FOR OFFSET, LETTERPRESS, NEWSPAPER, GRAVURE, ANALIN, COATING, GRAINING, STEEL MILLS, TEXTILE MILLS, DAYCO OFFSET BLANKETS, DAYCO FOUNTAIN DIVIDERS, DAYCO COLOR SEPARATORS.



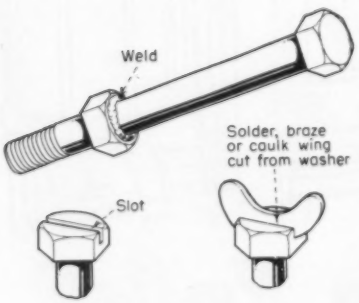
Preassembled Crankshafts Cut Loom Downtime

Until about a year ago, our loomfixers had always assembled loom crankshafts at the loom. When a crankshaft broke or was worn excessively so that it had to be replaced, the loomfixers removed the crankshaft by taking off all parts.

Then they took the crankshaft to the machine shop to have it repaired. Very often the shop men were busy on other jobs, and the loom had to stand until the crankshaft was repaired.

Now we have extra crankshafts preassembled in the machine shop; there's at least one crankshaft for each model of loom in the mill.

When a loomfixer has to put in a new crankshaft, he lifts out the old shaft with many parts left on it. Then he sets in a preassembled crankshaft from the machine shop. This new practice reduces loom downtime and saves loomfixers' time. (K-2766) *Joanna Way.*



Bolt-and-Stud Extensions Ease Machine Assembly

Hard-to-get-at bolts and studs used to be the cause of wasted energy and time when we assembled or took down parts of machinery. To facilitate the job, we now make the difficult bolts and studs easy to remove by making extensions as illustrated. Just use an extension that best fits your needs, and the effort will more than pay for itself over a period of time. (K-2866) *C. H. Willey, Penacook, N. H.*

Motors Help Clean Spinning-Room Floor

Some time ago we installed frame and floor cleaners in our spinning room. The floor cleaners did not work too well at first because the spinning-frame motors blew the lint on the floor in every direction. The air currents counteracted the advantages of the floor sweeper.

We solved the problem by covering the vents on the side of the motor away from the collecting pipe for the floor sweeper. This arrangement permits the motors to supplement the action of floor sweepers by blowing lint in the direction of the collecting pipe. The floor is now much cleaner. (K-2969) *Ivey Weavers, Inc., Hickory, N. C.*

$500 for Best Kink in 1956 - - - $25 for Best Kink Each Month

Plus $5 to $10 for Every Kink Accepted

What Is a Kink?

Any idea that will

- Cut costs
- Improve quality
- Reduce work
- Reduce production
- Make work easier

The idea may be one for improving machines, some attachment for a machine, a short-cut way of doing something, a labor-saving device—any idea at all that helps a mill man run his job better or easier.

Send in your Kink now. There is always a contest going on.

RULES OF CONTEST

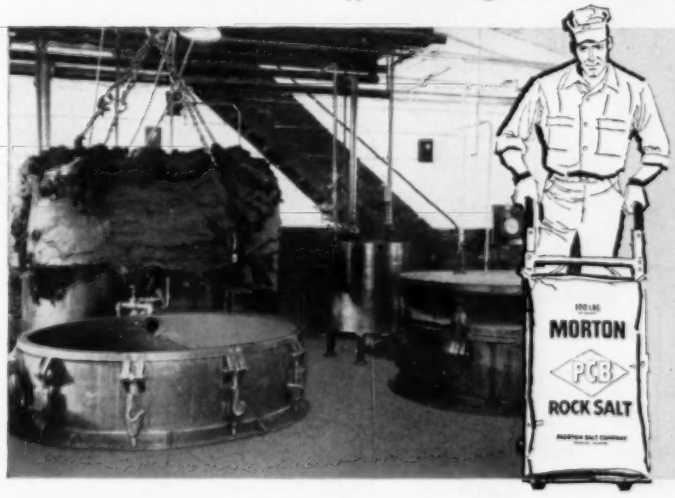
1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1956.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kinks, and their decision will be final. In cases of ties, duplicate prizes will be awarded.

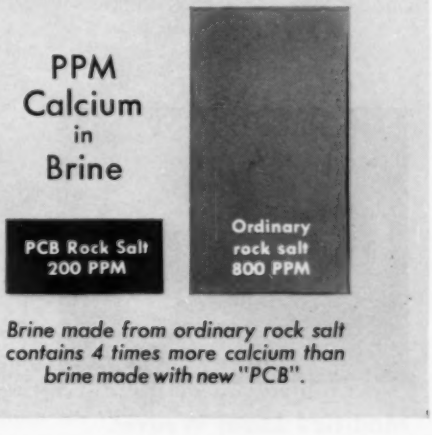
Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.

New! Morton "PCB" Rock Salt

for low cost, low calcium brine!

Saves money on sequestering agents! Eliminates streaks and off-shading! Increases color intensity!





Brine made from ordinary rock salt contains 4 times more calcium than brine made with new "PCB".

Morton "PCB" Rock Salt, a patented process for making low calcium brine, combines screened southern rock salt with chemicals that prevent the harmful calcium compounds that occur naturally in rock salt brine from going into solution.

As the chart above shows, "PCB" Rock Salt brine contains *75% less calcium* than brine made with untreated rock salt. (The less than 200 PPM calcium in "PCB" brine is inactive.) What's more, "PCB" can be used in your present rock salt dissolving equipment without additional construction or extra labor.

Available in 100-lb. bags or bulk, "PCB" is specifically recommended when brine is used in dyeing, rawstock, package, beam, beck or jig with either sulphur, direct or naphthol dyes. ("PCB" also can be used effectively in your water softener.)

"PCB" BRINE

● Saves money on sequestering agents ● Improves crock fastness with naphthol dyes ● Increases color intensity where sulphur dyes are used ● Results in softer finishes, more even shades ● Aids in retarding corrosion ● Is far less expensive than brine produced from purified low calcium evaporated salt.

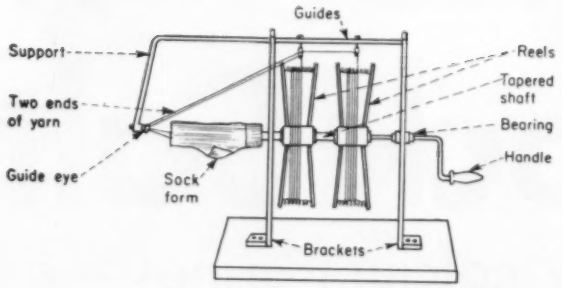
FREE! Let a Morton Brine Engineer take a sample of the calcium content in your water and brine. He'll have it analyzed and tell you how much you can reduce the calcium content by using "PCB" Salt.

MORTON SALT COMPANY
INDUSTRIAL DIVISION
Dept. TW-6, 120 So. La Salle Street,
Chicago 3, Illinois

*Please send me your free booklet on "PCB."*_____
*I would like a Morton Brine Engineer to make a calcium analysis of water and brine in my plant.*_____

Name_____
Title_____
Company_____
Address_____
City_____ State_____

 For more information, write direct or use Reader-Service post card.



Unravel Two-Feed Waste Hosiery To Save Yarn

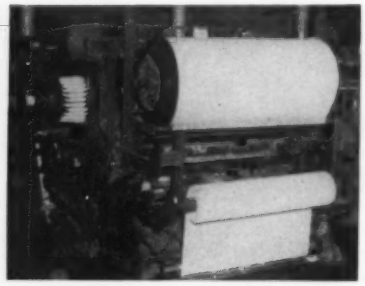
Dyed stretch yarn is a costly material, and expenses go up mighty fast when press-offs and other defects cause waste during hosiery knitting. Yarn of this type knitted on two-feed machines is difficult to unravel from the fabric for reknitting. The two ends must be separated and rewound simultaneously while the sock is being turned once for each two courses removed.

Here's how to make a device that will separate and rewind the yarn quickly and easily:

Screw a metal sock form to one end of a ½-in. shaft, and slightly taper the other end. Press two regular four-pin swifts or reels on the tapered end of the shaft about 3 ins. apart.

Support the shaft on two brackets screwed to a 1-in. wooden base. Attach a handle to the end of the shaft so that it can be turned easily. Fasten a wire to the brackets to hold porcelain guides for the yarn to run through.

Adjust the circumference of the reels to the length of the yarn in one course, thread the two ends from the waste sock on the form through the guides, and turn the reel. When the reels are full, the device can be moved to a cone-winding machine where the yarn is rewound for knitting into socks again. (K-2981)



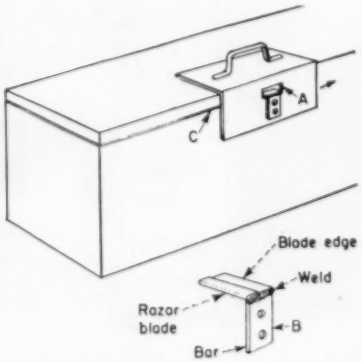
Modified Loom Weaves 1,200-yd. Rolls of Cloth

On a special order, we needed to weave large rolls of cloth. Our X-2 looms would not weave rolls large enough; therefore, we made several loom-motion changes so that the woven cloth is now rolled up back of the loom.

The woven cloth runs around the regular take-up roll. Then it passes over rollers and goes completely under the loom. A cloth roller is mounted in the yarn-beam stands, and the cloth rolls up on the roller. The cloth roller is driven by the regular Roper let-off coupled with a low-roll friction chain-driven take-up.

To make room for the roll of woven cloth, the yarn beam is raised to top-beam stands. A friction let-off is used on the yarn beam.

Now we weave rolls of cloth 1,200 yds. long and 41 ins. wide in a single piece. One style of cloth woven in these large rolls is 40x44-construction print cloth of 3.06 yds. per lb. (K-2740)



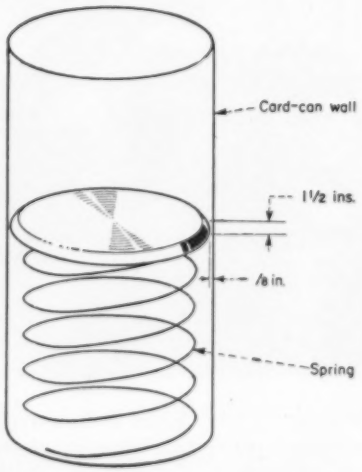
Handy Opener For Cardboard Cartons

An opener for cardboard cartons can be made from a small concrete edger and a razor blade. To make the opener, cut a slit *A* in the edger, weld a single-edge razor blade to a bar *B*, and bolt the bar to the edger so that the blade protrudes through the opening.

This opener will quickly and neatly cut the top from cartons and will cut around the corners without difficulty, as shown at *C*. (K-2937) *H. J. Haas, Martinsburg, W. Va.*

$5 to $10 for any Kink accepted for publication. Each one will be entered in the $25 and $500 prizewinner contest.

Send in your Kink now.

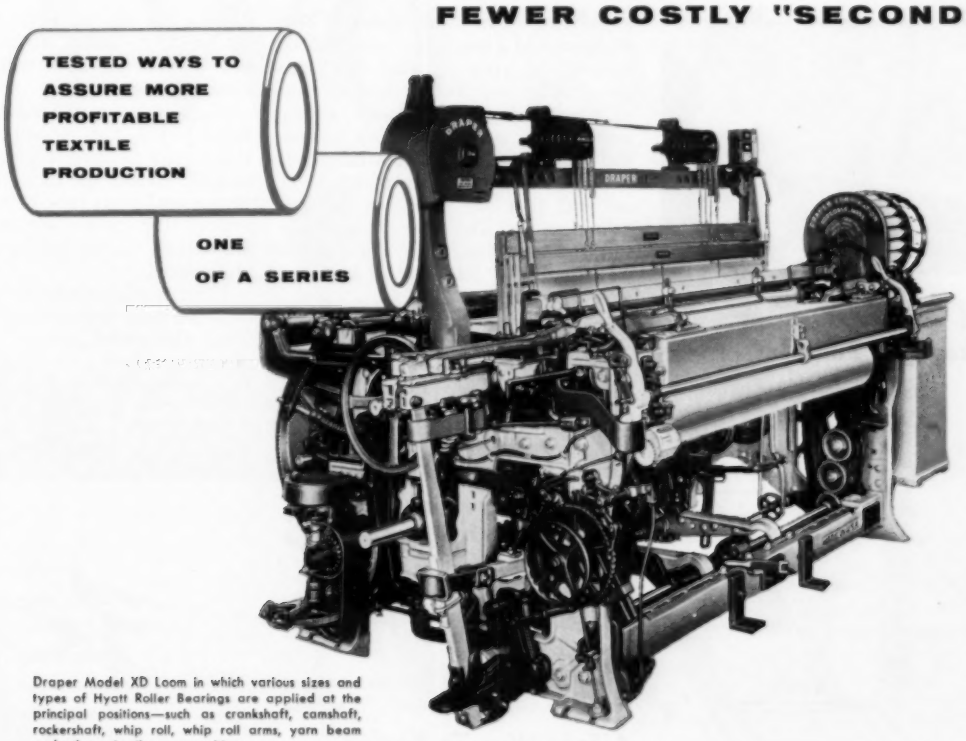


Saucer-Shaped Disk Reduces Sliver Waste

The edges of the flat disks on which the sliver rests in the card can became worn and rough and caused a lot of sliver breakage at our mill. The sliver would stick in the space between the edge of the disk and the wall of the can. Also, the operators often would injure their fingers while trying to remove the last layers of sliver from the cans.

We overcame this problem by making a disk shaped like an inverted saucer that fits snugly against the can wall, as illustrated. This arrangement permits all the sliver to be withdrawn easily, and the workers no longer injure their hands. Our waste at the succeeding machines has been reduced substantially. (K-3001) *T. K. Pattabhiram, India.*

HYATT ROLLER BEARINGS ASSURE MORE "FIRSTS"— FEWER COSTLY "SECONDS"



Draper Model XD Loom in which various sizes and types of Hyatt Roller Bearings are applied at the principal positions—such as crankshaft, camshaft, rockershaft, whip roll, whip roll arms, yarn beam and other miscellaneous positions.

Machines which get out of adjustment or spatter lubricant on cloth are responsible for the majority of profit-stealing "seconds."

HYATT Roller Bearings are one of the surest ways of curing these ills. In the first place, HYATTS are precision-built with *extremely close tolerances.* Critical settings can be accurately maintained because HYATTS are free from the excessive "play" which so often occurs in fast-wearing plain bearings.

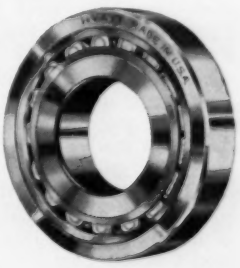
Secondly, all HYATT housings are *securely sealed* so lubricant cannot spatter and spoil the cloth. When you add these benefits to the remarkable savings in power, lubrication and maintenance which HYATTS make possible, it's easy to see why so many mills and machinery makers have adopted them!

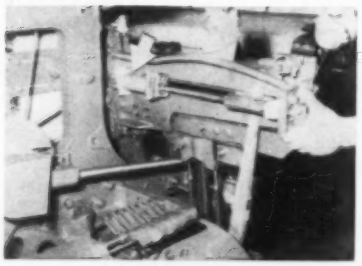
When you modernize or replace *any* of your machines, be sure to specify roller bearings by HYATT—America's *first* and *foremost* builder of cylindrical roller bearings. For further details on the profitable application of HYATTS to textile machinery, request Bulletin T-54 from Hyatt Bearings Division of General Motors, Harrison, New Jersey.

NO TEXTILE MACHINE IS BETTER THAN ITS BEARINGS!

HYATT ROLLER BEARINGS

STRAIGHT ROLLER BARREL ROLLER TAPER ROLLER





Odd Yarn Makes Picker-Rod Bumpers

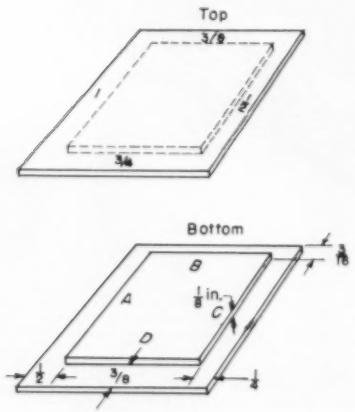
Picker-rod bumpers wear rapidly on most drop-box wool looms. The bumpers add a lot to the cost of loom upkeep. If worn bumpers are used, the shuttles are thrown out of true shuttle flight across the lay. Other troubles are excessively worn pickers and picker sticks, and loom bang-offs.

We make picker-rod bumpers in our mill that cost little but give excellent results. The bumpers are made from paper tubes, with $\frac{5}{8}$-in. inside diameters, and odd lots of wool or worsted yarn.

The yarn is wound on the paper tubes to an outside diameter of about 2 ins. A Foster winder does this job quickly. We add as much tension as possible to the yarn as it is being wound on the tube. The ends of the tube are cut off flush with the yarn after winding.

The $\frac{5}{8}$-in.-dia. paper tube slides over most picker rods snugly. We put about three plies of regular picker-rod bumper leather on each side of the yarn-wound paper tube to protect each end of the yarn. We remove the picker-stick bunter from the lay end of the loom.

These homemade picker-stick bunters last a long time without attention. They also make pickers and picker sticks last longer. (K-2654) *Eugene P. Schremp, Bristol, R. I.*



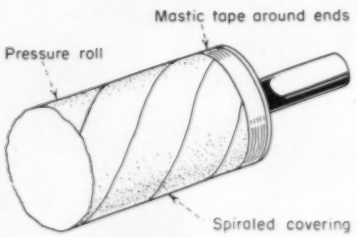
Dividing Gauge Speeds Center Punching

At our mill, we use a large quantity of $\frac{1}{8}$-, $\frac{3}{8}$-, $\frac{3}{4}$-, and 1-in. cold-rolled flat steel. To speed up center punching before drilling, I made a small gauge to mark the center of the work.

The gauge is made from a piece of 2x2x$\frac{1}{4}$-in. cold-rolled steel. Along each edge, I milled out a piece $\frac{1}{4}$ in. deep. I made cuts $\frac{1}{2}$, $\frac{3}{8}$, $\frac{1}{4}$, and $\frac{1}{16}$ in. wide at *A*, *B*, *C*, and *D* respectively, as illustrated.

On the opposite side, I tapered the edges back $\frac{1}{4}$ in. to a $\frac{1}{16}$-in. edge and casehardened the metal. On this side, I stamped *1* over the $\frac{1}{2}$-in. milled edge, $\frac{3}{4}$ over the $\frac{3}{8}$-in. edge, $\frac{1}{2}$ over the $\frac{1}{4}$-in. edge, and $\frac{3}{8}$ over the $\frac{1}{16}$-in. edge.

If I want to find the center of a $\frac{3}{4}$-in.-wide piece, I place the edge of the gauge marked $\frac{3}{4}$ over the metal. Since the gauge only can go $\frac{3}{8}$ in. over the metal, a scribe mark along the edge of the gauge marks the center of the piece. (K-2856) *James Lavoie, Chelsea, Que.*



A Safe Way To Fasten Pressure-Roll Covers

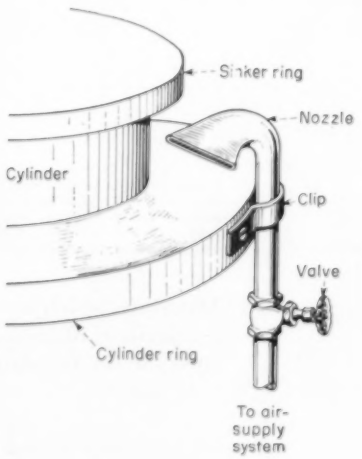
After new covering is glued to a pressure roll for a loom, the pressure roll is usually held out of the loom until the glue is dry. This practice is a good one to follow because the covering usually loosens if the glue is wet.

However, it is sometimes necessary to re-cover a roll and place it in a loom immediately. When we have to use a pressure roll while the glue is still wet, we bind the ends of the covering with tape. Mastic tape is best for the job, but even paper slasher tape will hold the covering. Then the loom can be put in operation without danger of loosening the covering.

It is also a good practice to use tape to bind the ends of re-covered rollers put in the supply room for future use. (K-2841) *H. E. Wenrich, Berwick, Pa.*

$5 to $10 for any Kink accepted for publication. Each one will be entered in the $25 and $500 prizewinner contest.

Send in your Kink now.



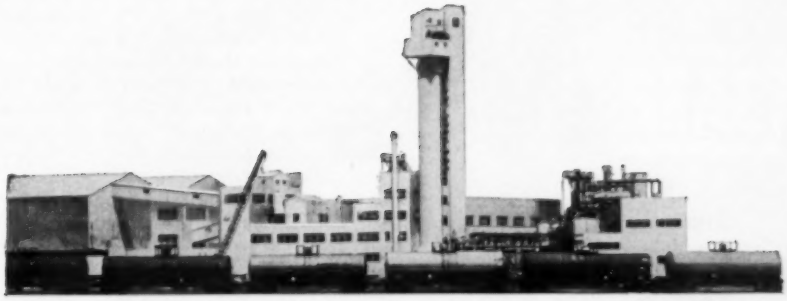
Keep Lint Off Machines With Continuous Air Flow

When yarns of wool or short-staple cotton are being knitted, lint soon collects on the machine and causes trouble. Some mills remove this lint with an air hose; other mills use an automatic cleaning device that blows the machine off at intervals.

Why not use an air flow that continuously prevents lint from accumulating on the vital parts of the machine? The pipe to supply the air flow can be connected to the main air supply from the compressor. A control valve should be fitted just below the nozzle to regulate the flow for different materials.

Bend the nozzle so that it points to the needles and cam system. The nozzle should have a thin, flat opening to give good coverage and yet preserve pressure in the air system. (K-2862)

your Two best sources for UREA



Allied's Nitrogen Division has 2 urea plants – one at South Point, Ohio and one at Omaha, Nebraska. When considering your source of UREA supply, Allied tops the list with its multi-plant production. Quality? Very high. Delivery? Fast – no matter where you are, thanks to widely separated producing locations. Carlots and trucklots from the plants. LCL from warehouse stocks in Passaic, N. J.; Chicago, Ill.; Providence, R. I.; East St. Louis, Ill.; and Charlotte, N. C. All shipments in easy-to-use, 100 lb. moistureproof multiwall paper bags.

Allied

...and

Allied

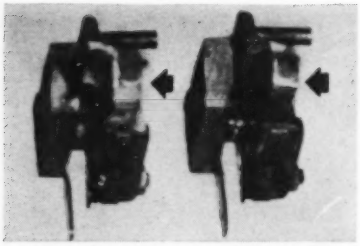
Dept. U1-30-3

Allied Chemical — NITROGEN DIVISION

40 Rector Street, New York 6, N. Y.

Ethanolamines • Ethylene Oxide • Ethylene Glycols • Urea • Formaldehyde • U. F. Concentrate—85 • Anhydrous Ammonia • Ammonia Liquor • Ammonium Sulfate • Sodium Nitrate • Methanol • Nitrogen Tetroxide • Nitrogen Solutions • Fertilizers & Feed Supplements

 For more information, write direct or use Reader-Service post card.



Repaired Temple Caps Reduce Jerk-Ins

On Draper XD looms, the thread cutters wear the temple caps after about four years of running. The thread-cutter spring pulls the thread-cutter stopping section against the back section of the temple cap.

When the temple cap becomes worn, the cutter protrudes too far between the cutter blades and leans to one side. As a result, the cutter often misses the yarn end to be cut; and when it does catch the yarn end, it chews the end off slowly. The cutter also wears the blades excessively.

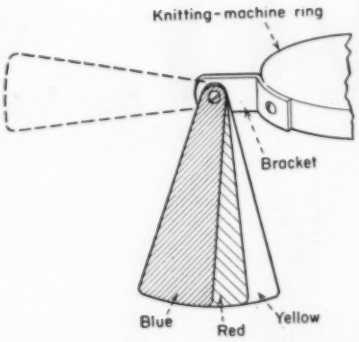
Our temple tops are made in two parts because they have adjustable caps. We bought 10 extra sets of temple tops without the caps and put the tops on 10 looms. Then we had the worn sections of the old parts built up with welding. The welded part was ground down to a smooth finish. By fixing the temples for 10 looms at a time, we soon had all our looms completed.

Since we have completed this project, our rolls of cloth look neater at the loom, there are fewer jerk-ins in the cloth, fixers have fewer looms flagged to work on temples, and there are fewer loose filling ends to be cut off in the burling room. (K-2800) *C. M. Whitcher, Midland, Ont.*

Mark Defects With Colored Thread

We increased our menders' efficiency 15% by providing them with automatic markers that put a colored thread in the cloth selvage. Several markers with different colored threads are used to signify the type of defect.

For example, when the cutter sees a red mark in the selvage, he knows to look for a slub. A yellow mark means a hole, a blue mark means a thin place, and a black mark means an end out. (K-2965)

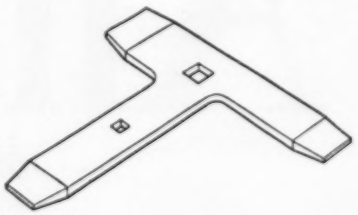


Signal System Aids Knitting Production

In a knitting room where there are several hundred knitting machines, fixers are usually flagged to stopped machines by a piece of fabric or a sock hung over a conspicuous part of the machine. In some mills the fixer's attention is brought to the stopped machine by a shout from the knitter.

We've improved our fixers' efficiency and their nerves by using a special flag system. The flags have different colors and are made from stiff plastic sheet. Each color signifies a major fault. For example, a red flag means a smash, a blue flag means holes in the fabric, and a yellow flag means drop stitches.

The flags are screwed together at their narrow end and supported on a bracket that protrudes from the front of the machine facing the aisle. The fixer now glances rapidly down each aisle to locate stopped machines. (K-2910)



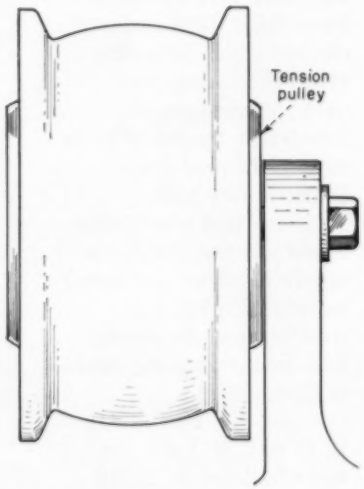
How To Make a Handy Screw Driver

A screw driver with three blades of different sizes can be made from a piece of flat steel. This tool is very handy for tightening or removing large screws and for working in close places where the conventional screw driver is too long.

If square holes are cut in the blades, taps can be inserted in the holes to clean out or rethread holes for cap screws. These holes also are useful for hanging up the tool when it is not in use. (K-2939) *Chas. H. Willey, Concord, N. H.*

$5 to $10 for any Kink accepted for publication. Each one will be entered in the $25 and $500 prizewinner contest.

Send in your Kink now.



Modify Tape Tension Pulleys To Save Tape

We found in our spinning room that tape-tension pulleys after several years of operation tend to wear so that the tapes fall off if there is the slightest fault in alignment with pulley levers.

We put an end to spindle stoppage and tape damage by building up the side walls of the pulley, as shown in the sketch. The life of the pulley is extended, tape is saved, and the banding operator's work is reduced. (K-2942) *I. J. Abraham, India*

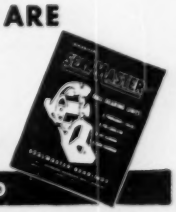
SEALMASTER BALL BEARING UNITS

Mean Cleaner, Faster Production . . . with Less Maintenance!

SEALMASTER self-aligning, pre-lubricated Ball Bearing Units with their exclusive combination of engineering features are designed to meet the requirements of today's automatic high speed production in the textile industry. They assure faster, cleaner production with a minimum of "downtime" and maintenance. Whether you manufacture textile machinery or operate it, SEALMASTER'S patented features like zone hardening, land ridden ball retainer, locking pin and perimeter dimple and labyrinth seal are important to you. These features are standard in the SEALMASTER line of Ball Bearing Units—a complete line to answer your every machinery requirement.

SEALMASTER'S *EXCLUSIVE*
COMBINATION OF FEATURES ARE IMPORTANT TO YOU!

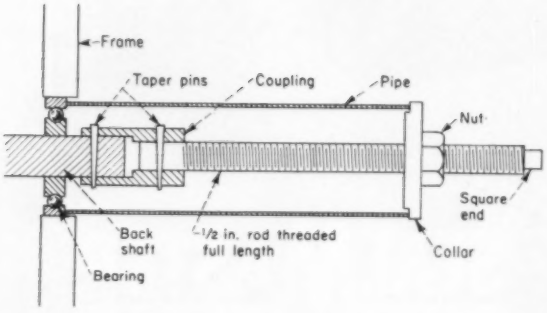
Write for Bulletin 454 and send along your bearing problems. We welcome the opportunity to serve you.



SEALMASTER BALL BEARING UNITS

TYPICAL SEALMASTER STANDARD & SPECIAL UNITS BEING USED IN THE TEXTILE FIELD

SEALMASTER BEARINGS A DIVISION OF STEPHENS-ADAMSON MFG. CO. • 10 RIDGEWAY AVE., AURORA, ILLINOIS

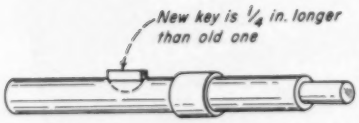


How To Remove Shafts From Hosiery Machines

Our problem was to remove the back shafts from our Komet hosiery machines in order to replace gears. We generally found the gears seized on the shaft, and the shaft was almost impossible to drive out. I made a puller to remove the shaft from the gears and bearings that saves a lot of time and trouble.

To make the puller, use a pipe that is slightly smaller than the outside of the bearing and about 2 ins. longer than the back shaft. Fit a piece of ½-in. rod, threaded full length, in the pipe. Fasten a coupling to the threaded rod with a taper pin. Remove the high-speed gear, and fit the other end of the coupling over the end of the back shaft. Unite the couplings with another taper pin.

Fit a collar over the end of the pipe, and push the threaded rod through the collar. Screw a nut down the rod to the collar, rest the pipe against the bearings, and screw in the nut to pull out the shaft. Square the end of the threaded rod to take a ½-in. wrench so that the rod will not turn. (K-2945) *James Lavoie, Chelsea, Que.*



Big Key in C&K Let-Off Eliminates Marks in Cloth

We used to be bothered with tight and loose places in the cloth woven on Crompton & Knowles S-6 looms. The let-off fails to turn for several picks. Then it releases all at once and spins. The result is a thick or tight place in the cloth followed by a section of cloth up to ¼ in. in length with no filling at all.

We found that this trouble is caused by the Woodruff key in the worm shaft. The standard key is ¾ in. long. The key does not hold the worm tight on the shaft. Consequently, the worm gear moves forward against the fiber washer on the worm shaft and the fiber washer binds against the let-off housing. Then the whole let-off shaft assembly is frozen. After the shaft binds for a few picks, it is released and begins to spin to make the thin place.

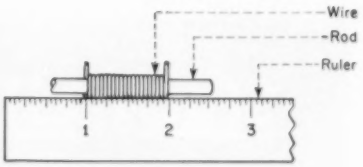
To eliminate this trouble, we pulled all our let-off shafts out of the housings and replaced the ¾-in.-long key with a key 1 in. long. The additional ¼ in. of surface holds the worm gear in a constant position on the worm-gear shaft.

However, this practice does not eliminate all let-off trouble. We constantly overhaul our let-offs and repack them with standard grease. (K-2764) *Charles R. Batzer, Lancaster, Pa.*

How To Renovate Brooms and Brushes

We find that worm brooms and brushes can often be restored to usefulness. Brushes can be cleaned with a wire brush mounted on a grinding wheel. If dry bristles have a tendency to break, they should be dampened with water before they are cleaned. The uneven bristles of loom-cleaning brushes should be clipped and the grease and lint removed with a wire comb or brush.

When brooms become worn, the lower binding cords can be removed and the uneven straw or fiber trimmed to form a straight sweeping surface. The broom can be cleaned by dipping in cleaning fluid, shaking vigorously, and removing accumulated lint. Such renovated brooms will often pick up waste better than the original longer, more-resilient bristles. (K-2920) *H. E. Wenrich, Berwick, Pa.*

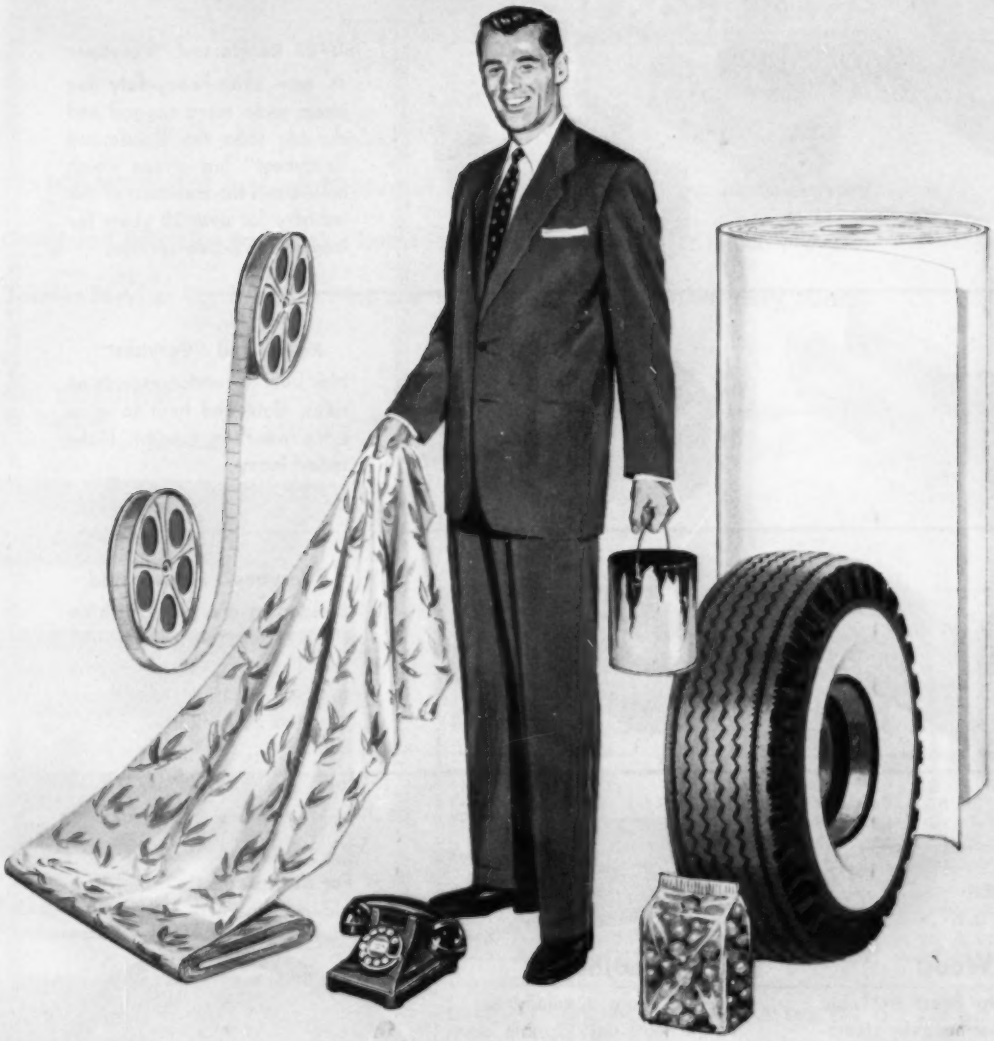


How To Measure Wire Without a Micrometer

If you want to know the diameter of a piece of wire and a micrometer is not available, here's how to measure the wire with an ordinary ruler:

Wind the wire on a round stick or rod with each turn pressed firmly against the other. Count the number of turns per inch and divide the result into one. Thus, if there are 50 turns of wire per inch, you have $1 \div 50 = .02$-in. dia. (K-2936) *W. F. Schaphorst, Newark, N. J.*

THIS MAN SERVES MANY MASTERS



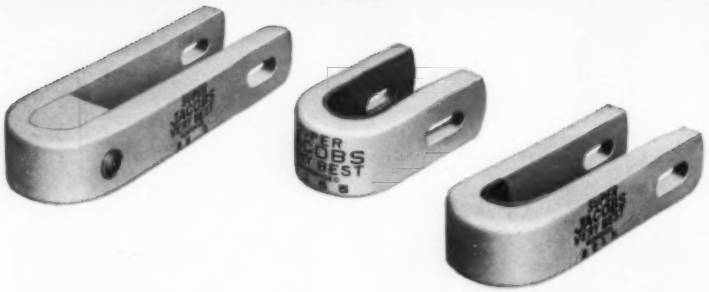
WHO IS HE? He's a Buckeye Customer Service man—paid by Buckeye to help you, our customers, get the most from cellulose. Familiar with every phase of cellulose chemistry, he is equipped to work closely with your technical people . . . is always available to see that there is a Buckeye cellulose that meets your requirements *exactly*.

And Buckeye Customer Service is backed up by Buckeye Research —extensive laboratories . . . specialized testing equipment . . . pilot plants that simulate actual production conditions. Teamwork between customers and Buckeye has resulted—and will continue to result in—new developments, new uses for cellulose!

BUCKEYE

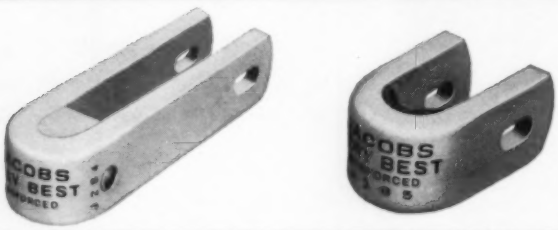
Buckeye Cellulose Corporation, Memphis 8, Tenn.

LUG STRAPS by JACOBS



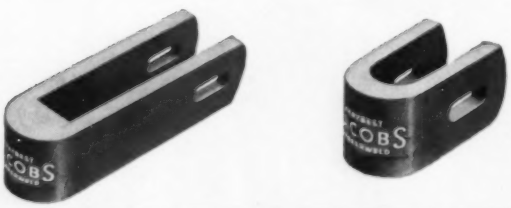
SUPER Reinforced "Verybest"

A new extra-heavy-duty lug strap, even more rugged and durable than the Reinforced "Verybest" lug straps which have been the standard of the industry for over 20 years for long, trouble-free service.



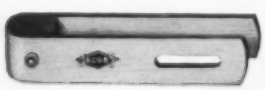
Reinforced "Verybest"

Has built-in reinforcements at sides, slots and heel to give extra wear on modern high-speed looms.



"Verybest" Rubberweld

Molded as one piece with no rivets. Gives absolutely uniform picking action. Resists oils, will not stretch, and not affected by humidity.



Wood

Made from finest available Hickory, permanently steam-bent to shape, and secured with heat-treated rivets.

Leather

Crafted from specially selected hairy oak, chrome or apron leather—plied, stitched and folded.

Reinforced Roller Cushion and Eclipse Best

For best production results on older or lighter looms.

Note: All Jacobs Lugs can be supplied with or without plugs in any size — from stock.

JAKE JACOBS says — "Jacobs Lug Straps will pay off cost-wise for you. They're the Verybest you can buy. Performance proved — ask for samples!"

THE BULLARD CLARK COMPANY

JACOBS

SOUTHERN DIVISION Charlotte, N. C.

NORTHERN DIVISION Danielson, Conn.

READER SERVICE

TEXTILE WORLD is a Monthly Market Place Bringing to You, in its Advertising and Editorial Pages, the latest in Equipment and Trade Literature. The Reader-Service Card Below Puts the *FREE* Information Within Easy Reach.

MILL EXECUTIVES:
To Obtain More Information On:

ADVERTISEMENTS — JOT DOWN PAGE NUMBERS AND ITEMS

EQUIPMENT AND SUPPLY NEWS — CIRCLE ITEM NUMBERS HERE

NEW LITERATURE — CIRCLE ITEM NUMBERS HERE

PACKAGING SHOW REPORT

DYES AND CHEMICALS — CIRCLE ITEM NUMBERS HERE

TO SUBSCRIBE: — COMPLETE THIS SECTION

TO CHANGE ADDRESS: — PRINT YOUR OLD ADDRESS HERE

Cards require no postage . . . but be sure to give your name, title, mill connection, and address.

This card expires August 31, 1956

PAGE	SUBJECT	PAGE	SUBJECT
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

EQUIPMENT AND SUPPLY NEWS:

T-1	T-2	T-3	T-4	T-5	T-6	T-7	T-8	T-9	T-10	T-11	T-12	T-13
T-14	T-15	T-16	T-17	T-18	T-19	T-20	T-21	T-22	T-23	T-24	T-25	T-26
T-27	T-28	T-29	T-30	T-31	T-32	T-33	T-34	T-35	T-36	T-37	T-38	T-39
T-40	T-41	T-42	T-43	T-44	T-45	T-46	T-47	T-48	T-49	T-50	T-51	T-52
T-53	T-54	T-55	T-56	T-57	T-58	T-59	T-60	T-61	T-62	T-63	T-64	T-65
T-66	T-67	T-68	T-69	T-70	T-71	T-72	T-73	T-74	T-75	T-76	T-77	T-78
T-79	T-80	T-81	T-82	T-83	T-84	T-85						

NEW LITERATURE:

F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11	F-12	F-13
F-14	F-15	F-16	F-17	F-18	F-19	F-20	F-21	F-22	F-23	F-24	F-25	F-26
F-27	F-28	F-29	F-30	F-31	F-32	F-33	F-34	F-35	F-36	F-37	F-38	F-39
F-40	F-41	F-42	F-43	F-44	F-45	F-46	F-47	F-48	F-49	F-50		

A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11	A-12
A-13	A-14	A-15	A-16	A-17	A-18	A-19	A-20	A-21	A-22	A-23	A-24
A-25	A-26	A-27	A-28	A-29	A-30	A-31	A-32	A-33	A-34	A-35	A-36

DYES AND CHEMICALS: D-1 D-2 D-3 D-4 D-5 D-6 D-7 D-8 D-9 D-10 D-11 D-12 D-13 D-14 D-15

☐ 1 yr. $2 ☐ 2 yrs. $3 ☐ 3 yrs. $4

DOMESTIC RATES
FOREIGN ON REQUEST

Product or Service .....

No. Employees in your plant .....

OLD ADDRESS
No. & Street .....
City ..... State .....

PLEASE TYPEWRITE OR PRINT PLAINLY

Name ..... Title .....
Mill .....
Street .....
City ..... State .....

TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. June, 1956

Outstanding NEW LITERATURE
Free for the Asking

NO REPEATS . . . Listed here for June are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY

Top rolls—For cotton-spinning frames. Spring-weighted units adaptable to fiber up to 2 ins. long. "Whitin Review," Jan.-Feb., 1956. Whitin Machine Works. (F-1)

Card coilers—For cotton cards. One model serves 14-, 15-, and 16-in. cans; large model takes 18-in. cans. McDonough Foundry & Machine Co. (F-2)

Cotton gins—New features include enlarged opening for mote delivery, improved controls, and safety features. Bulletin 617A. Lummus Cotton Gin Co. (F-3)

Gill reducers—Breakers, intermediates, and finishers with improved drive and balanced production to keep all units producing smoothly. Holdsworth Mfg. Co., Inc. (F-4)

AUXILIARY EQUIPMENT

Multiple V-belt drives—Engineering, historical data on V-belt drives for textile, other industries. Booklet 20-E8297. Allis-Chalmers Mfg. Co. (F-5)

Homogenizers—For fluids of varying types and viscosities. Booklet H-55 describes 100 models up to 6,000-gals.-per-hr. capacity. Manton-Gaulin Mfg. Co., Inc. (F-6)

Mechanical chart drives—SAMA Tentative Standard RC11-1955 provides standards of dimensions and performance of spring-driven chart drives. Scientific Apparatus Makers Assn. (F-7)

Motor-control center—Accommodates fusible or circuit-breaker types of starter units in ratings of 1 to 200 hp. Bulletin GEA-6367. General Electric Co. (F-8)

Geared motors—Built-in speed reduction is featured in a line of motors described in Bulletin E-2408 from Reliance Electric & Engineering Co. (F-9)

Electric brakes and clutches—For textile, other industrial drives. Push-button operation for single or multiple applications. Form 6209. Warner Electric Brake & Clutch Co. (F-10)

Boiler-feed-water treatment—Hot zeolite process described in Technical Reprint T-147 from Graver Water Conditioning Co. (F-11)

Stationary tachometers — Units designed to operate at many speeds for a variety of industrial purposes. Bulletin 105. Metron Instrument Co. (F-12)

Temperature indicators—Panel, portable, controlling pyrometers, local or remote control. Buchen Co. (F-13)

Heat-exchanger data—Presented in the form of curves and examples, with comparisons of various types of heat exchangers. E. C. Cooley Co. (F-14)

SUPPLIES & CHEMICALS

Deodorizer — For washrooms. The product is itself odorless; neutralizes unpleasant odors. Aireactor Corp. (F-15)

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY CARD
FIRST CLASS PERMIT No. 64 (Sec. 34.9 P. L. & R.) NEW YORK, N. Y.

Postage Will be Paid by Addressee

Textile World
330 W. 42nd Street
New York 36, N. Y.

McGraw-Hill Publishing Co., Inc.

NEW LITERATURE Continued

Plastic pipe—Chemical-resistant rigid pipe of polyvinyl chloride, ½ in. to 8 ins. in dia. Technical Bulletin 80-3. Joseph T. Ryerson & Son, Inc. (F-16)

Custom-made glassware—For laboratories. Cat. CA-2. Lab. and Pharmaceutical Sales Dept., Corning Glass Works. (F-17)

Chromium chemicals—Handling and technical data on the common chromates assembled in booklet form. Columbia Southern Chemical Corp. (F-18)

Laboratory instruments — Balances, pumps, ovens, other equipment described in house paper from Schaar & Co. (F-19)

Textile chemicals—Antistatic compounds and dyeing assistants listed in 26-page booklet from Carbide & Carbon Chemicals Co. (F-20)

Rust preventives—Complete listing of many types and colors of rust-preventive paints in Form 255 from Rust-Oleum Corp. (F-21)

Corrosionproof cements — Based on furan, phenol, sulfur, polyester, and silica. Bulletin 5-2. Atlas Mineral Products Co. (F-22)

ENGINEERING & MAINTENANCE

Chain puller—Differential-type puller, aluminum alloy, capacities from ¾ to 6 tons. Bulletin 146-G. Chisholm-Moore Hoist Div., Columbus-McKinnon Chain Corp. (F-23)

Rubber-lining catalog—Describes lining materials and methods for tanks and auxiliary equipment. Bulletin 7115. Raybestos-Manhattan, Inc. (F-24)

Postweld heat treatment—How to heat-treat welds on air-hardening alloys. Bulletin TR-543. Tubular Products Div., Babcock & Wilcox Co. (F-25)

High-pressure pumps—Triplex pumps suited to many industrial applications. Bulletin P-55. Manton-Gaulin Mfg. Co., Inc. (F-26)

Centrifugal fans—Nonoverloading fans for industrial ventilation, air conditioning. Cat. 1120. Westinghouse Electric Corp., Sturtevant Div. (F-27)

Small pumps—Rotary and centrifugal pumps for chemical service described in folder from Eco Engineering Co. (F-28)

Glass insulation—Acoustical, thermal, vibration-absorbing material for industry. Form WPD-11. L.O.F. Glass Fibers Co. (F-29)

Time-delay switches—For a.c. and d.c. circuits; fast and slow break. Bulletin SD-1. Elastic Stop Nut Corp. of America, AGA Div. (F-30)

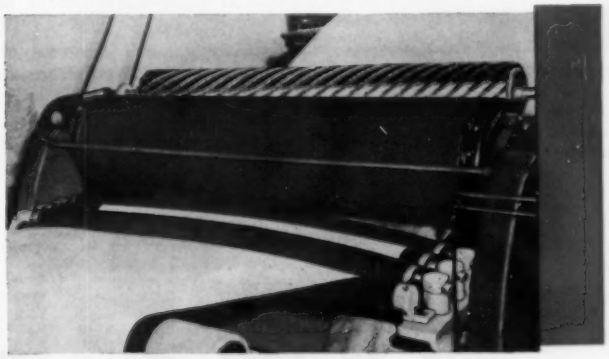
HERE'S WHY
JENKINS' METLKOR BRUSHES
are on
JAMES HUNTER SQUEEZE ROLLS

James Hunter Machine Co., North Adams, Mass., wanted a brush to stand up when removing acidified flock from their Carbonizer Squeeze Rolls. Jenkins' engineers designed a METLKOR brush with exposed metal parts of stainless steel and bristle of acid-resistant Nylon.

Mr. Frank B. Morrill, Chief Engineer, James Hunter Machine Co., says: *". . . we have been using Jenkins' brushes for flock removal on our Squeeze Rolls for about three years . . . They do a much better cleaning job than the brush previously used, and stand up several times longer . . ."*

This top textile machinery manufacturer has time-tested and proven the efficiency of patented Jenkins' METLKOR—the cylinder brush that lasts *many times longer* and *can be rebristled!* It can cut your brush replacement costs and do a better job, too.

If you have any standard or special brush problem, call or write: M. W. Jenkins' Sons Inc., Cedar Grove, Essex County, New Jersey.



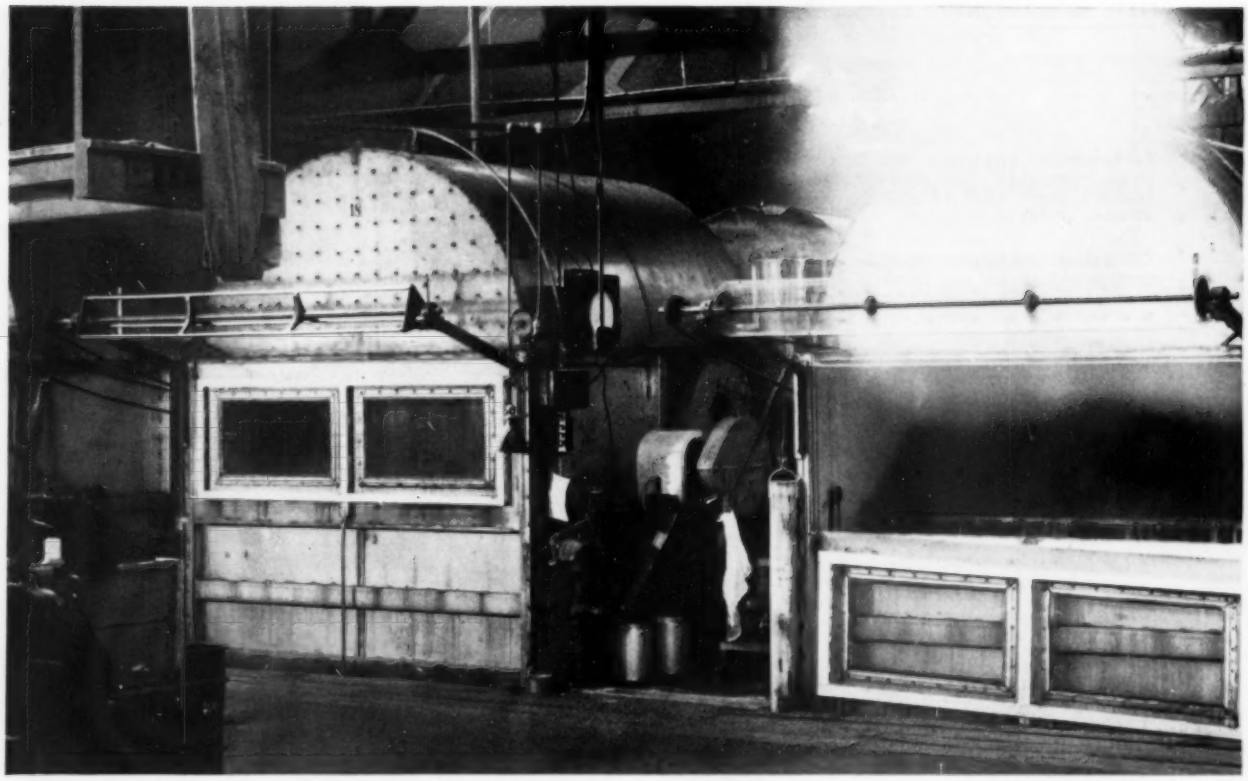
A JAMES HUNTER CARBONIZER SQUEEZE ROLL
WITH A JENKINS' METLKOR NYLON BRUSH

M. W. JENKINS' SONS, INC.

Over Three-Quarters'Century of Pioneering Brushes for Industry.

Cedar Grove, Essex County, New Jersey

For more information, write direct or use Reader-Service post card.



The metal that reduces maintenance and

"These ENDURO Stainless Steel dye kettles could last a lifetime." So says the superintendent of a prominent worsted mill.

The battery of dye kettles, shown above, possesses a remarkable performance record for resistance to rust and corrosion. They were fabricated from Republic ENDURO Stainless Steel and have been in almost continuous use for 15 years.

During this span, the kettles have been subjected to constant contact with dyeing solutions and high-pressure steam—to repeated flushings and washings. Yet, there has been no deterioration, no maintenance, no replacements. The dye works superintendent sees no reason why they shouldn't last a lifetime.

A bonus benefit has been ENDURO's non-contaminating characteristic. ENDURO will not absorb color, thereby eliminating the problem of dye carryover and contamination caused by other materials of construction. It permits true colors. A water rinse quickly restores ENDURO's smooth, hard surface to sparkling cleanliness and permits fast color changeovers.

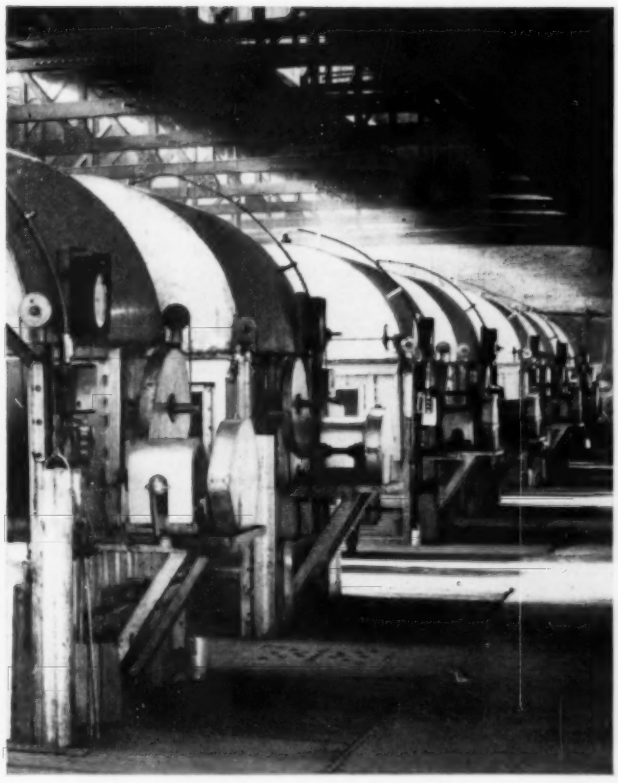
Here is proof that ENDURO Stainless Steel is the metal that reduces maintenance and replacement costs, cuts down-time for cleaning, extends equipment life.

Your supplier will give you more advantages of ENDURO-made textile equipment. Or if you require confidential, obligation-free metallurgical service, just mail the coupon.

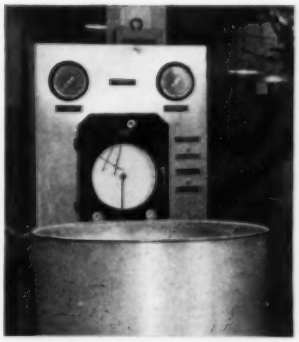
REPUBLIC

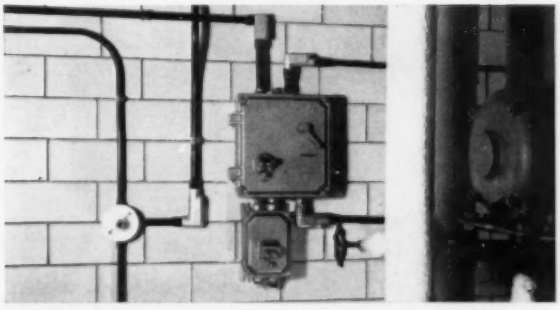
REPUBLIC STEEL

World's Widest Range of Standard Steels



FREE-MACHINING ENDURO STAINLESS STEEL BARS EXTEND OPERATING LIFE of precision textile instruments exposed to corrosive atmospheres. Recording pens and interior parts, such as cams, pawls, levers and segments, are made from ENDURO. ENDURO Bars eliminate a costly plating operation and help control machining costs. Republic will help you apply the high physical properties and corrosion-resistance of ENDURO to your textile machine parts.



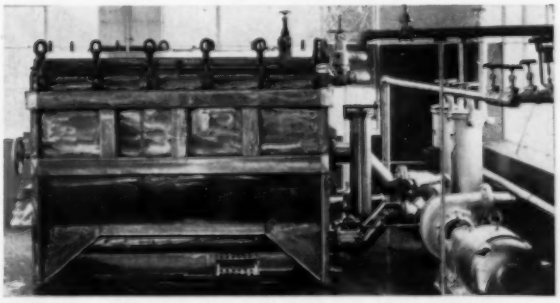


REPUBLIC DEKORON-COATED E.M.T. REDUCES REPLACEMENT COSTS on electrical raceways by resisting the corrosive action of fumes, steam and gases. This easily installed electrical raceway gives you the double protection of a polyethylene coating over a galvanized finish. Moisture-tight, corrosion-protected joints are made by wrapping the threadless connectors and couplings with plastic tape. Dekoron-Coated Electrical Metallic Tubing costs less because it lasts longer. Send for Booklet DEK-1.

replacement costs-

ENDURO®

Stainless Steel



REPUBLIC ENDURO STAINLESS STEEL PIPE REDUCES MAINTENANCE and replacement costs by providing a corrosion-resistant piping system. Here it is used to transport dyeing solution from stainless steel storage tanks to a pressure dye, boil-off, and bleach machine. ENDURO Stainless Steel Pipe stubbornly resists the corrosive action of most alkalies and acids. Any slightly higher initial cost is offset by definite savings in maintenance.

STEEL

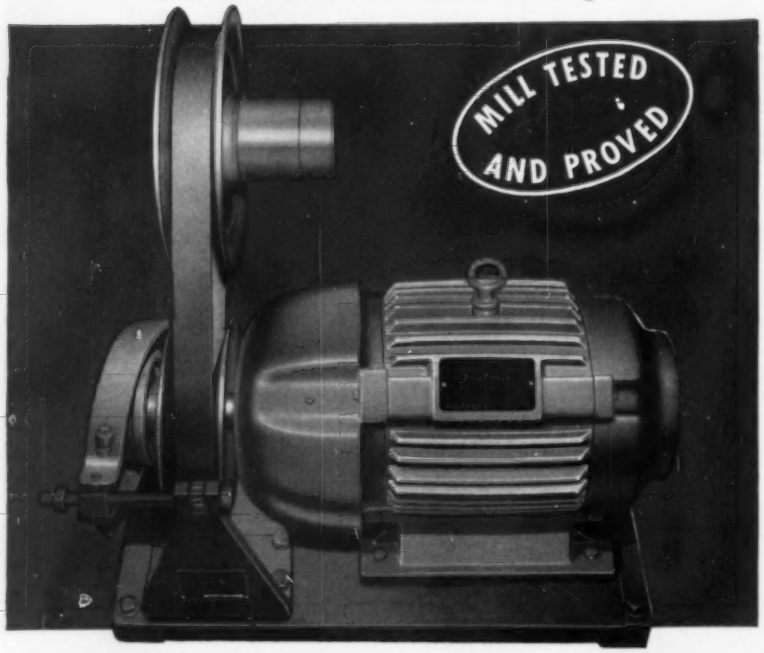
and Steel Products

REPUBLIC STEEL CORPORATION
Dept. C-1957
3190 East 45th Street • Cleveland 27, Ohio

☐ Have a metallurgist call
Send more information on:
☐ ENDURO® Stainless Steel ☐ Dekoron®-Coated E.M.T.
☐ ENDURO Stainless Steel Pipe ☐ Free-Machining ENDURO Bars

Name_____ Title_____
Company_____
Address_____
City_____ Zone_____ State_____

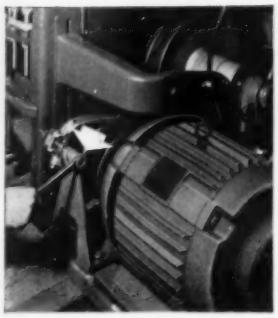
Increase spinning efficiency and frame flexibility



REEVES Vari-Spin Drive

Fast, easy adjustment!

For *exact* cylinder speed regulation—from 500 to 1450 rpm—simply turn shifting screw with wrench . . . *with frame in operation!* Get the required speed—in seconds!



Top production

Optimum spinning efficiency demands the highest front roll rpm that will maintain acceptable yarn quality (ends down) and constant work loads (sides per spinner.) REEVES Vari-Spin permits speed adjustments —while the frame is running—to compensate for variations in humidity and roving quality.

Durable, flexible performance

Maximum frame utility requires drive flexibility for today's yarn count and fiber blend changes, as well as future traveler and ring improvements. With almost 3 to 1 speed range, the rugged and reliable REEVES Vari-Spin permanently reduces wasted fixer hours and frame down time.

Get the story on "Mill Proved" Vari-Spin from your REEVES representative, or write for folder W22a-G561

REEVES DIVISION • COLUMBUS, INDIANA

RELIANCE ELECTRIC AND ENGINEERING CO.

NEW LITERATURE Continued

Corrosion control—Cathodic system of corrosion control described in Brochure 4078-HC from Harco Corp. (F-31)

Emergency lighting—Automatic equipment that takes over when usual power sources fail. Models for normal or hazardous locations. Cat. 10. Electric Cord Co. (F-32)

Robot operators—Electrically actuated mechanisms for opening, closing doors. Form SDM. Robot Appliances, Inc. (F-33)

Power distribution system—Busways for heavy loads. Enclosed design, 600 to 4,000 amp. rating; 2-, 3-, or 4-pole construction. Bulletin GEA-6151. General Electric Co. (F-34)

Solder-end valves—Globe, gate, check valves for soldering into air, water, steam lines. Cir. 603. Lunkenheimer Co. (F-35)

GENERAL

Thermostats — For building-temperature control; line or low-voltage types, single and double switch. Bulletin 1000-B. Sarco Co., Inc. (F-36)

Scheduling board—An enlarged card index showing work planned, work done, in relation to time. Cat. K7-777 from Remington Rand Div. of Sperry Rand Corp. (F-37)

Shipping information—"How To Ship Economically in Corrugated Boxes" titles a booklet from Hinde & Dauch. (F-38)

Product literature—A directory of the company's products for many industries. Booklet B6057. Allis-Chalmers Mfg. Co. (F-39)

Industrial-waste treatment—Technical data on several systems of treating industrial wastes. Technical Paper 64 from Milton Roy Co. (F-40)

Rubber-roll handbook — Care and recommended applications of rubber rolls in a publication from Rodney Hunt Machine Co. (F-41)

Materials-handling tips—Cost-cutting methods of materials handling illustrated in publication from Towmotor Corp. (F-42)

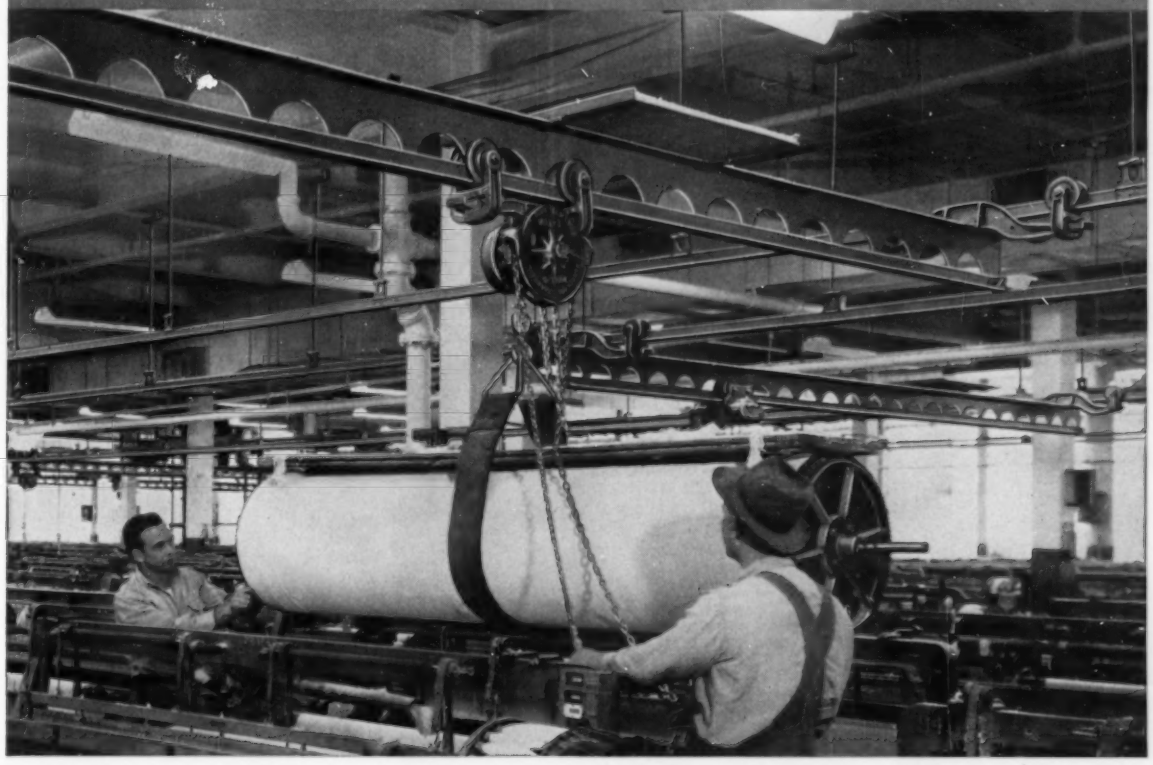
Air-conveyor systems—Bulk materials can be handled by pressure-vacuum systems as described in Booklet GDM-35 from Fuller Co. (F-43)

Floor-finishing products — Approved list of materials for care and maintenance of maple floors. Maple Flooring Mfrs. Assn. (F-44)

Lift trucks — Mechanically powered lift trucks in 2,500- to 4,000-lb. capacities. 3- to 4-in. lift. Folder 671. Yale Materials Handling Div., Yale & Towne Mfg. Co. (F-45)

For more information, write direct or use Reader-Service post card.

The Fast, Safe, Efficient Way to
HANDLE 24" AND 30" BEAMS IN THE WEAVE ROOM



Because of large economies resulting, textile mills are rapidly going from the old 18" standard to 24" and 30" diameter beams. This means heavy beams with harness — often running 1000 to 1500 pounds — far too cumbersome to handle manually with old-time floor dollies. It also means sizes larger than shaft alleys in most weave rooms will accommodate.

The only natural and obvious solution to the handling of such large beams in the weave room is the use of simple, inexpensive Cleveland Tramrail cranes, or track and switch systems. Thereby, heavy beams can be easily moved overhead to any loom by one man. Aisle widths need not be changed. The same crane that places a beam in a loom removes and transports the cloth.

Efficient storage racks can be used with Cleveland Tramrail systems, permitting orderly storage of beams, three or more high. Any beam can be selected without disturbing others and delivered directly to any loom without rehandling.

Safety is improved tremendously when Cleveland Tramrail is provided. Hernias become practically non-existent. Injury to beams is greatly reduced. Floor damage is minimized.

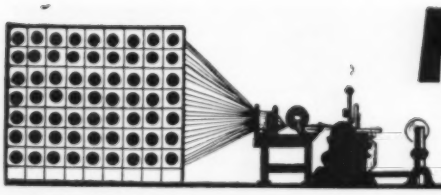
GET THIS BOOK!

BOOKLET No. 2008. Packed with valuable information. Profusely illustrated. Write for free copy

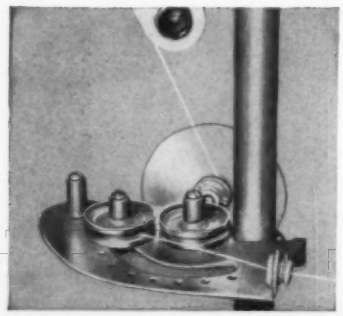
CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
8453 East 287th St. *Wickliffe, Ohio*

CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

 For more information, write direct or use Reader-Service post card.

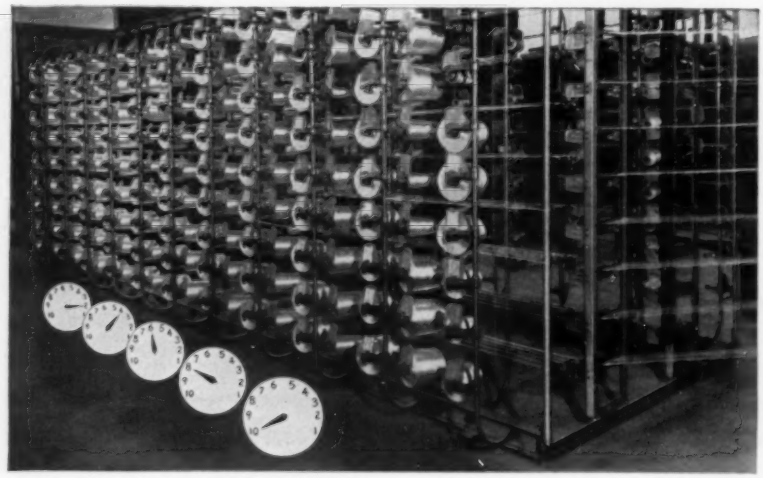


McBRIDE CREEL CORNER



AT LAST— YOUR YARN TENSION CAN NOW BE EVENIZED AT THE BEAM

McBride Tension-Master



Note how settings change to evenize yarn tension at the beam.

Warping of light yarns such as 15 denier nylon requires special attention to tension settings. Yarn originating at the front of the creel will have 5 to 7 grams less tension per end than will yarn starting at the rear of the creel that has passed through the intermediate guides. This tension variation must be evenized at the beam for better warping and better fabrics.

McBride Tension-Master provides a wide range of settings to evenize the warp tension. Visual control is simplified because a glance checks an entire row of units.

The Tension-Master is standard on all McBride creels and is available with anti-snarl, transparent, plexi-glass shield. Greater ranges of tension are possible by adding flat, steel, washer-type weights to the tension discs. Discs are available in mirror or satin finishes and in weights from 15 to 170 grains.

CREELS for every purpose, CONE HOLDERS, STOP MOTIONS, TENSION CONTROLS, WARP BEAMS, FLANGES, CARPET INSPECTION TABLES, METAL AND WOOD ROLLS.

COMPLETE ENGINEERING SERVICE IS PART OF EVERY McBRIDE INSTALLATION

Mc BRIDE

COTTMAN AVE. & WISSINOMING ST.
PHILADELPHIA 35, PENNSYLVANIA

IN THE MIDWEST:
ALBERT R. BREEN
80 E. JACKSON AVENUE
CHICAGO 4, ILLINOIS

IN CANADA:
HUGH WILLIAMS & CO.
47 COLBORNE STREET
TORONTO 1, ONTARIO

NEW LITERATURE Continued

Truck casters—Complete listing of straight, swivel, plain, grooved casters. Cat. K-38. Bond Foundry & Machine Co. (F-46)

Floor machine—Designed to polish, scrub, sand, and refinish floors by use of different heads. Ponsell Floor Machine Co. (F-47)

Hand hoist—Chain hoists in ½- to 2-ton capacities; light, easily operated. Yale & Towne Mfg. Co. (F-48)

Electric fork truck—Compact, 1,000-lb.-capacity trucks with hydraulic lift to 56 ins. in standard model. Big Joe Mfg. Co. (F-49)

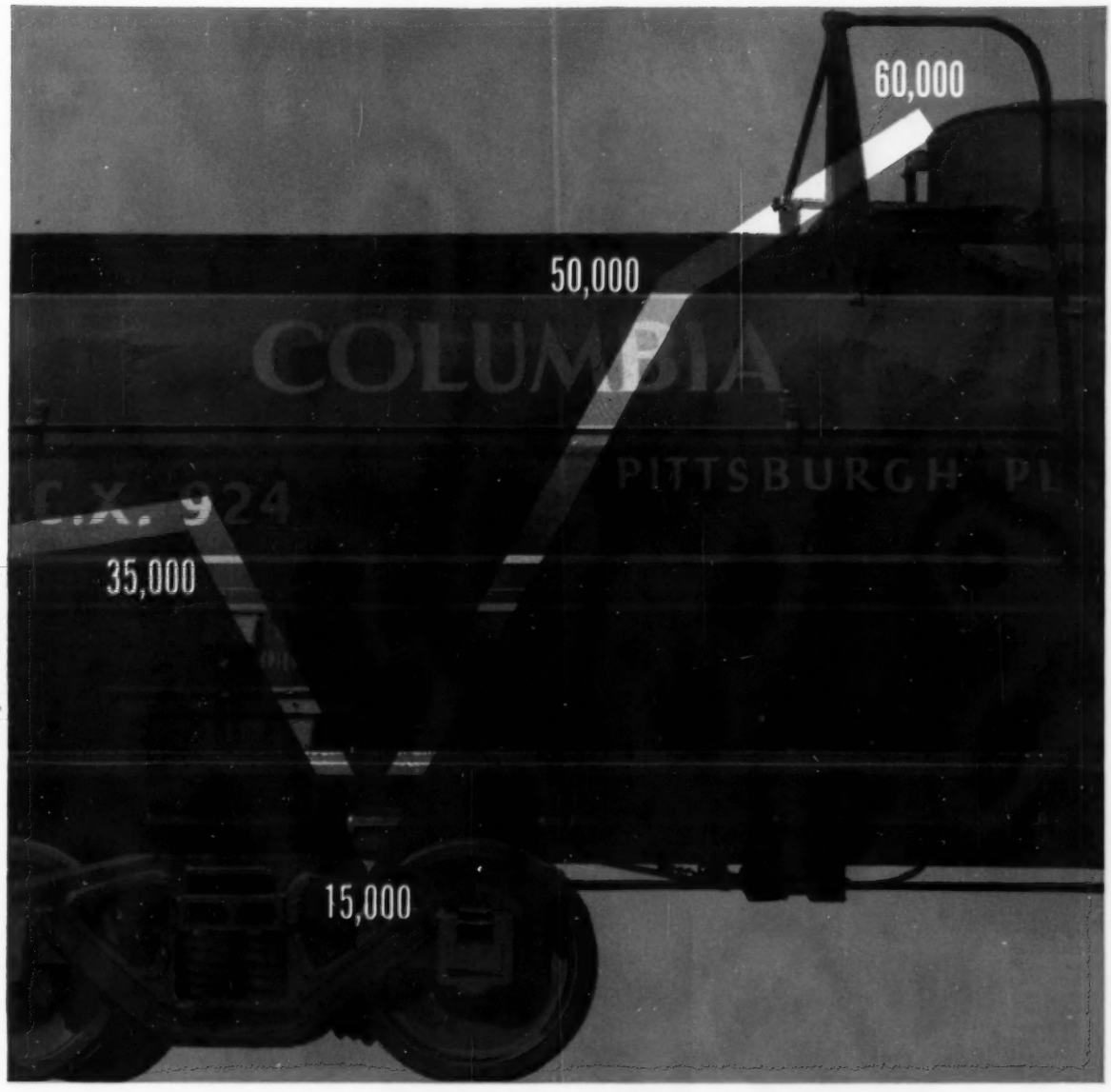
Power float—Compacts, floats, concrete floors. Adaptable to other floors and operations by attaching other heads. Kelley Machine Div., Wiesner-Rapp Co., Inc. (F-50)

HUMAN RELATIONS IN THE INDUSTRIAL SOUTHEAST, by Glenn Gilman, Associate Professor of Industrial Management, Georgia Institute of Technology; University of North Carolina Press, Chapel Hill, N. C.; 336 pages, $5.

This study of personnel history and practices in Southern textile mills stresses the place of the mill as a regional institution and traces the impact of the mill's influence on every phase of the lives of the people involved.

Considerable factual data on the industrial growth of the South is combined with a description of industrial human relations and how they have affected the economic, cultural, and religious phases of life in a Southern mill community. The book should be of practical value to supervisors, administrators, and executives in Southern industry.

CONTINUED ON PAGE 178



How many tank cars of liquid chlorine would you say were produced last year?

Total production of liquid chlorine by America's chemical industry in 1955 was an estimated 3,407,935 tons.

This represents an increase of 38% since 1950 and an increase of 65% since 1945.

Based on 55 ton capacity cars, last year's chlorine production was enough to fill a string of 61,962 tank cars.

Chlorine continues to grow. This year, Columbia-Southern remains the leading merchant producer of chlorine.

Columbia-Southern's sales, traffic, and technical departments are always ready and pleased to assist you with your chlorine problems.

COLUMBIA-SOUTHERN CHEMICAL CORPORATION

SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY

ONE GATEWAY CENTER, PITTSBURGH 22, PENNSYLVANIA

DISTRICT OFFICES: Cincinnati • Charlotte • Chicago Cleveland • Boston • New York • St. Louis • Minneapolis New Orleans • Dallas • Houston • Pittsburgh • Philadelphia • San Francisco

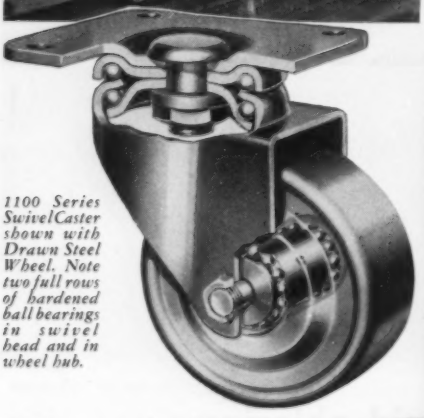
IN CANADA: Standard Chemical Limited and its Commercial Chemicals Division

 For more information, write direct or use Reader-Service post card.

Faultless CASTER MATERIALS HANDLING FACTS

INCREASING TEXTILE PRODUCTION AND DECREASING COSTS AT RUSSELL MANUFACTURING CO., ALEXANDER CITY, ALA.

Advanced engineering methods of servicing over 64,000 spindles at the mills of Russell Mfg. Company have helped them to be recognized as one of the South's most enterprising textile mills. The continuous productive operation of textile machinery depends to a large extent upon keeping the equipment supplied with work materials. Keeping work material on hand and feeding it into the spinning machinery speedily is accomplished at Russell Mills with a combination of integrated trucks. And to assure these trucks a trouble-free, continuous cycle through every phase of mill operation, the Russell executives selected Faultless 504-4TG rigid plate and 1104-4TG Double Ball Bearing Swivel Casters with drawn steel wheels.



1100 Series SwivelCaster shown with Drawn Steel Wheel. Note two full rows of hardened ball bearings in swivel head and in wheel hub.

Faultless castered equipment can lead the way to reduced costs and increased production in *your own plant.* Casters for light, medium, heavy and special duties are included in the extensive Faultless line. Faultless wheels for every type floor and load, as well as for special temperature and chemical conditions, are available.

500 Series with Plaskite Wheel and Thread Guard to keep lint out of bearings, string from winding around axle.

Each month the solution to a real materials handling problem is fully presented in a free, handy size folder "Faultless Facts." Ask your local Faultless Distributor for copies or write to us, no obligation.

FAULTLESS CASTER CORPORATION
EVANSVILLE 7, IND.
Offices in Atlanta, Baltimore, Boston, Buffalo, Chicago, Cleveland, Dallas, Detroit, Grand Rapids, High Point, Indianapolis, Los Angeles, New Orleans, New York, Philadelphia, Portland, Seattle, St. Louis, Canada: Stratford, Ontario

FAULTLESS SOLVES THE TOUGH JOBS

BOOK OF ASTM STANDARDS, 1955, Part 7, American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.; 1,692 pages, $11.

This volume of the triennial ASTM publications establishes standards for testing textiles, soap, water, paper, adhesives, shipping containers, and atmospheric analysis.

Listed are 354 standards, 166 of which are new or have been revised since 1952. Tentative revisions of standards appear at the end of the standards to which they apply.

AN ENCYCLOPEDIA OF THE CHEMICAL PROCESS INDUSTRIES, by Jeffrey R. Stewart, F.A.I.C.; Chemical Publishing Co., Inc., 212 Fifth Ave., New York 10, N. Y.; 820 pages; $12.

Raw materials, processes, equipment, and finished products of the chemical process industries are listed in this book. Thousands of trademarked products and trade names are included, which makes the volume a valuable buyer's guide. Technical and scientific terms common to the chemical processing industries are defined in one section.

A SURVEY OF DOMESTIC ELECTRONIC DIGITAL COMPUTING SYSTEMS, by Martin H. Weik, Ballistic Research Laboratories, Aberdeen Proving Ground; Available from OTS, U. S. Dept. of Commerce, Washington 25, D. C.; 271 pages, $4.75.

What the various electronic digital computers do, how they can be utilized, and which type is most suitable for a given situation are some of the questions answered by this survey. Systems are described generally and then in detail, with illustrations and samples of typical applications. Costs of computers, a list of U. S. manufacturers, and a glossary are included in the report.

HOSIERY THRU THE YEARS, by Ira J. Haskell, 15 Parker Ave., Lynn, Mass.; 130 pages, $5.

This historical essay deals with the making of hosiery from the time of Queen Elizabeth, when the Rev. Wm. Lee invented the first knitting machine, to the present day. Emphasis is placed on styles rather than manufacturing techniques. This booklet is well illustrated with styles of hosiery that were popular in the past.

When the record says "20" . . .

and the bin says "200"

. . . you need Positive IBM Inventory Control

Inventory stores and records *agree*—when you put IBM *positive* inventory methods to work. With IBM controls, overstock, understock, and excess investment in Stores and Supplies can be prevented.

Typical of these *inventory controls* is the Cost Distribution Report. It pin-points Stores cost by department, fixer and machine type. With this and other IBM-prepared data on average monthly consumption, balance on hand, reorder cycle and vendor analysis, management can re-evaluate automatic reorder points, to maintain optimum inventory levels at reduced capital investment.

Throughout the entire plant, a strong chain of IBM controls links together all recording, accounting and reporting functions into a unified system.

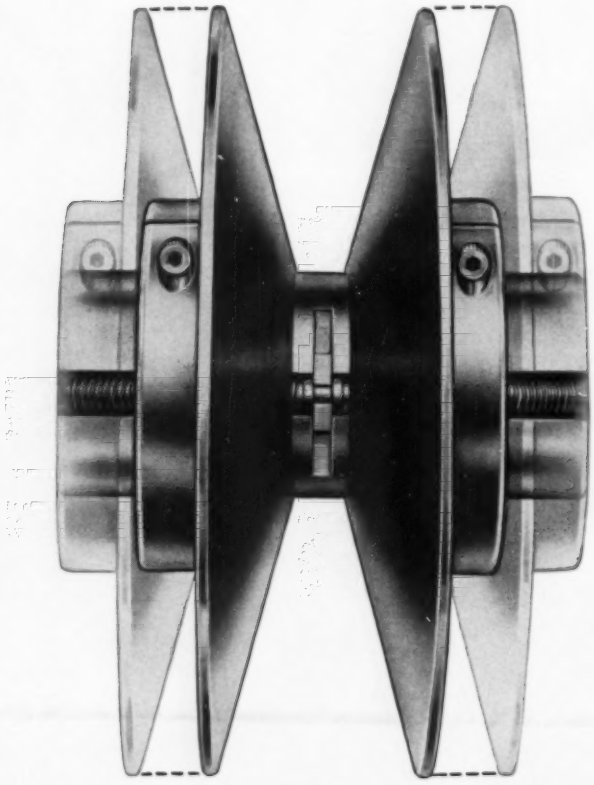
Detailed clerical work is done *automatically*. IBM equipment makes all pricings, extensions, postings and listings. You get error-free controls from the moment Stores are drawn until your final Stores Report is prepared.

Today's vigorous competition in textiles demands *increased* management attention to inventory cost. To lower *your* inventory cost call your IBM representative for the down-to-earth facts or write: TEXTILE DEPARTMENT A56, International Business Machines Corporation, 590 Madison Avenue, New York 22, N. Y.

DATA PROCESSING • ELECTRIC TYPEWRITERS • TIME EQUIPMENT • MILITARY PRODUCTS

IBM DATA PROCESSING

only a twist of the wrist



for the right speed setting

Wood's offers the simplest variable speed sheave on the market today! So easy to change speeds. Simply turn the single adjusting screw from either side to change pitch diameter. With the speed chart furnished you can adjust the sheave to the desired speed without trial and error. Simplified design provides positive clamping of the two adjustable flanges . . . eliminates fretting corrosion. Single wide range belt gives maximum HP efficiency. Does away with the problem of maintaining matched belts and matched grooves. (Maintenance costs go down because no periodic lubrication is necessary for the drive.)

If you are interested in lowering costs, ask for complete information on the most talked about drive in the Spin-Weave Industry, write for Bulletin #497 and the name of your nearest Wood's distributor. No obligation.

Wood's

T. B. WOOD'S SONS CO.

CHAMBERSBURG, PA.

CAMBRIDGE, MASS. • NEWARK, N.J. • DALLAS, TEXAS • CLEVELAND, O.

HIGH-BULK ORLON

CONTINUED FROM PAGE 95

used to reduce the sliver to a roving from 5 to 6½ grains, according to the yarn size required. These new 60-spindle frames produce bobbins up to 2 lbs.

Roving frames are cleaned down after each doff to prevent excess build-ups of lint. Two bobbins from each frame are collected each day and tested for weight, evenness, and appearance on the blackboard.

Spinning is done on Whitin long-draft frames. The frames have 3-in.-dia. rings, and the yarn is spun on 9-in. bobbins.

One frame has been equipped with an optical light that shines along the frame at a level just below the front-roll nip. The light reflects in a mirror on the opposite end of the frame and lights up the yarn so that the spinners can see ends down much better. This device, which is electronic, is particularly useful when colored yarns are spun.

A shrinkage test is done every day on yarn from each frame. A 60-yd. skein is treated in hot soapy water for 30 mins. and dried at room temperature. The yarn is then wound on spools for twisting.

Whitin twisters are used to produce the two-ply yarns. Each creel holds up to 1,000 lbs. of yarn when fully loaded. Yarn is twisted at 4,900 rpm. on 12-in. bobbins, which then go to be wound on cones.

Singles yarn is wound from spools on Universal Roto-Coner equipment. This system insures double winding and eliminates bad knots and other defects.

Tow-dyed Orlon is also processed at Caron. The machines used to process this material are partitioned from the other machines so that colored lint will not contaminate the undyed material.

Large cotton sheets are hung from the light brackets to totally enclose these machines. Light colors are processed first before darker shades are run. At the end of the run, the machinery is blown down thoroughly with the air hose until the superintendent is satisfied that no colored fibers remain on the machine.

Stroboscope Checks Spindles

Other quality practices at Caron include the use of a stroboscope to check the spindle speed of spinning and twister frames. Each side of every spinning frame is checked on alternate days. Any variation above 50 rpm. means a check on tapes and other sources of trouble.

Each machine has a blackboard

THE BOX SETS THE STAGE...

Gaylord Boxes

. . . when you raise the curtain on a new product. A modern container dramatizes the features of your product. Yet, the cost of a fresh design for your box is just a small fraction of what you spend on product development.

Strikingly handsome printed effects are now made possible by Gaylord's newly-developed "Oyster White" boxboard. For samples and complete information, call your nearby Gaylord office.

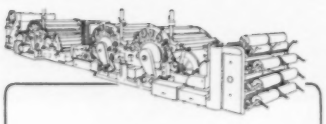
CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT PAPER AND SPECIALTIES • KRAFT BAGS AND SACKS

GAYLORD CONTAINER CORPORATION ★ ST. LOUIS

DIVISION OF CROWN ZELLERBACH CORPORATION

How record card room yields
are being achieved through Davis & Furber

"coordinated production"



COMPARE THESE D & F
"COORDINATED PRODUCTION"
FIGURES

Number of Card roping ends	80 to 192
Production, lbs/hrs	40 to 300
RPM, 7¼" dia. winding drums	30 to 70

(variations according to stock and yarn sizes)

"Coordinated production" requires careful, thorough study of many phases of mill operation – and qualified recommendations based on such study. Here are the primary ways D&F engineers help *you* achieve the advantages of Davis & Furber "Coordinated Production."

★ *Review your present card room operations.*

★ *D&F "in-the-mill" Technical Survey to analyze existing conditions.*

★ *Presentation of Davis & Furber recommendation*

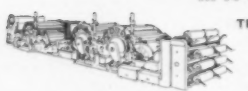
(a) *New equipment, supplies, and/or modernization.*

(b) *Establishing an efficient preventive maintenance program.*

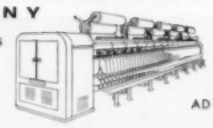
(c) *Supervising installation, adjustment of D&F machines during production runs of your stock under mill conditions.*

Get complete information now on D&F "Coordinated Production," from either North Andover, Mass., or Charlotte, N.C. Ask for your copy of The D&F News.

DAVIS & FURBER
MACHINE COMPANY



TEXTILE MACHINERY DESIGNERS
AND MANUFACTURERS
North Andover, Mass.
Charlotte, North Carolina



AD 11.1

CARDS • SPINNING FRAMES • PREPARATORY MACHINERY • WARP DRESSING MACHINERY • FINISHING MACHINERY
MACHINERY MODERNIZATION • ACCESSORIES, SUPPLIES, SPARE PARTS • TECHNICAL SERVICE & CONSULTATION

fixed in a prominent position. Chalked figures indicate such factors as lot number, size, and material type.

A color system keeps material from becoming mixed. Bobbin and cone tips are painted, or small colored stickers indicate the material type.

Humidity conditions are maintained at 50 to 55% r.h. when high-bulk Orlon is run. Plans are under way to install a refrigerated-air-conditioning unit.

A laboratory, used by the quality-control staff, is equipped with most yarn-testing devices to help keep the constant check of material flowing through the plant.

New machines, a trend toward larger packages, efficient machinery layout, and a hard-working supervisory staff help Caron to keep abreast of new yarn developments that may come along in the future.

RASCHEL NETS

CONTINUED FROM PAGE 97

when the limit switch is closed and the beam speeds up to feed more yarn to the needles. If the warp sheet becomes slack, the control bar rises and touches another limit switch to reverse the motor control and slow down the beam speed.

The front and middle beams, which hold the nylon yarn, are connected by a chain; so the control device operates both these beams.

The fabric take-up has a continuous drive, and four rolls provide a constant pull on the fabric. Rubber-grip covers on the rolls help to supply a more-positive grip on the fabric.

Ends Are Tied Individually

When rubber beams are replaced in the machines, the old threads are cut off and the ends are tied around the horizontal support. The new ends are separated and tied around the support. An end-and-end lease helps the threader select the correct thread, and the ends are tied individually.

Bright-colored tickets are placed at intervals in the warp sheet of the nylon beams to control the lengths of the fabric pieces. As the yarn is knitted, the tickets run with the thread to the guide bar, and the knitter removes the ticket and stops the machine to remove the fabric roll.

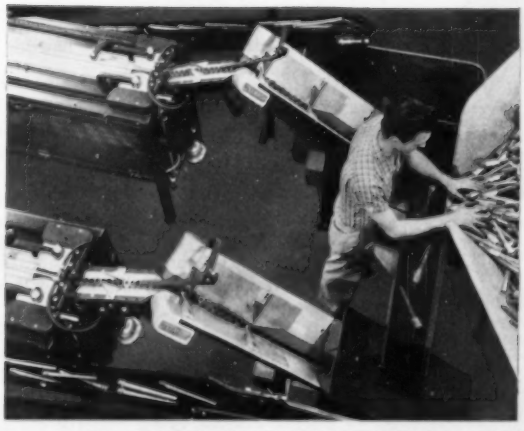
Faulty ends of yarn are removed from the warp before they become knitted in the cloth. A spare bobbin that is turned by the hand-wheel shaft takes up the faulty end, and a perfect end of yarn is knitted directly from the pirn.

To give a more-rigid selvage that lies flat without puckering, a heavier yarn

Terrell

REVOLUTIONARY Labor Saving Device

Slices your Bobbin Cleaning costs



NEW TERMACO

SEMI-AUTOMATIC

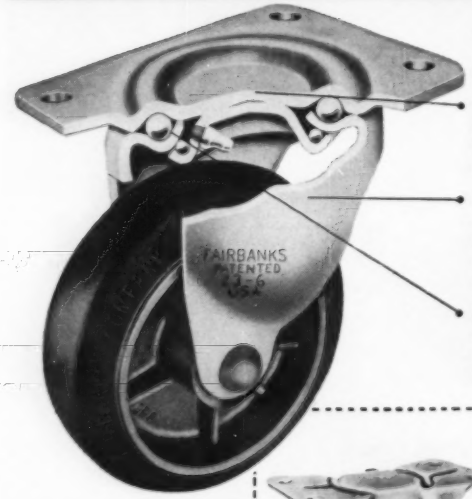
BOBBIN FEEDERS

- Enable *one* operator to run *two* machines *without any loss in production.*
- Savings on average installations pay for feeders well within a year.
- For use on Type L — serial No. 400 and above — and all Type K Machines.
- Request complete detailed information from

The TERRELL MACHINE COMPANY, Inc., 3000 South Boulevard, P. O. Box 928, Charlotte, N. C.

For more information, write direct or use Reader-Service post card.

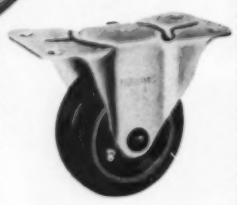
ACHIEVEMENT
IN CASTER DESIGN
FAIRBANKS
"LOCKWELD" Swivel Casters — Without King-Pin!



CHECK these unmatched advantages:

- No King-Pin. Patented "LOCKWELD" construction eliminates the major cause of caster failures.
- Patented leg design—spherical shape provides greater strength through better dispersion of shocks and overloads, easier swiveling under load.
- Larger raceways and ball bearings — perfectly aligned by the rigid welded structure — give faster, easier swiveling action.

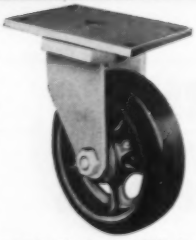
Fairbanks Series "23" double ball race swivel casters, for medium duty, sizes 3" to 8".



Fairbanks Series "33" rigid casters, match Series "23" casters in height, sizes 3" to 8".

Fairbanks Series "21" single ball race swivel casters, for regular duty, sizes 2" to 6". Matching rigid Series "31" casters available.

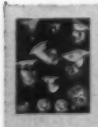
HEAVY DUTY STEEL CASTERS



Fairbanks Series "27" double race swivel casters, for heavy duty, sizes 6", 8" and 10".

Fairbanks Series "37" rigid casters match the Series "27" casters in height, sizes 6", 8" and 10"

Fairbanks Series "500" Vulcanized Rubber Tired Wheels, roller bearing, sizes 3" to 18". Standard of the industry



YOURS ON REQUEST: Casters and wheels catalog complete with specifications and details. Write for your free copy today.

Order Fairbanks products through your local distributor who is always ready to serve you.

THE **Fairbanks** COMPANY

393 Lafayette Street, New York 3, New York
Branches: New York 3 • Boston 10 • Pittsburgh 22 • Rome, Ga.
Valves • Truck • Casters • Wheels • Dart & PIC Unions

from an individual bobbin is used for the selvage thread. A rubber thread is left out near the selvage so that the tenter pins do not enter too far from the edge of the fabric.

A row of fluorescent lamps is fixed to the frame on either side of the machines just below the beams to give more than ample light on the needles and the fabric.

The 2-hp. motors that drive the new Kidde machines have Warner brakes. The guide bars are operated by tricot-type pattern wheels that run in an oil bath.

Sinker bars are used on all machines to give better control of the net fabrics during knitting. Cloth is stretched under each machine between the shafts and the fabric to keep oil and grease from splashing on the fabric.

As each roll of fabric is removed from the machine, the needles and sinkers are cleaned with a solvent cleaner. These parts are then blown out with the air hose.

Wide Beams Are Better

Viscose yarn for the power-net fabrics is now knitted directly off beams supplied by the yarn producer. This practice not only has saved warping time and costs but also has resulted in better-quality work because flange marks are reduced since the 42-in. spools have been used instead of the 14-in. spools. Tension variations between beams have been reduced, and broken ends are fewer.

To accommodate the 42-in. beams on the 96-in. machines, a 12-in. adaptor is placed between the beams. A collar is welded on each side of the center section to lock the adaptor in place.

The yarns are then threaded through a guide stretched between the frame below the beams. This guide keeps the threads from brushing against the flanges, and the yarns go over the dancer bar to the guides.

How Laundry Nets Are Made

The laundry-net fabrics are made on three-bar 24-gauge machines equipped with pattern chains. Six various net designs are made according to the required end use. One machine running 260-den. nylon produces as much as 100 lbs. of fabric per shift.

The laundry-net fabrics are dyed in 17 different colors for identification purposes. Some nets that are not dyed are given a special finish.

The fabric is then laid up on the cutting table with a Cutting Room Appliances machine and inspected for faults. Up to 75 pieces are laid up on the cutting table, and the various shapes are marked out and cut with a

HOW STAINLESS STEELS BOOST DAY-TO-DAY SAVINGS in textile production

Crucible Rezistal® Stainless Types for Textile applications

STAINLESS TYPE	NOMINAL % Cr	Ni	Other	USED FOR
302	18	8		General Purpose
303	18	8	S	Free-machining
304	19	9	Low C	Welding
309	25	12		High Temperature
310	25	20		Higher Temperature
316	18	12	Mo	High Corrosion-resistance
317	19	13	Mo	Higher Corrosion-resistance
318	18	12	Mo, Cb	Welding (stabilized)
321	18	8	Ti	Welding (stabilized)
347	18	8	Cb	Welding (stabilized)

To plant and mill operators, stainless steel is not a luxury metal—but the most economical construction material they can use wherever there's need for its exceptional corrosion-resistance, strength and cleaning ease.

Add to these properties its remarkable resistance to wear and abrasion – and you can see why Crucible stainless steels mean longer service life, increased production, reduced maintenance and cleaning time, fewer replacements and repairs... throughout the textile plant.

See how stainless steel can boost day-to-day savings in your plant. Get practical, economy-minded advice on stainless selection, fabrication and maintenance in your free copy of "Making the Most of Stainless Steels in the Textile Industry." Send for it today. Or call your local Crucible representative. *Crucible Steel Company of America, Henry W. Oliver Building, Pittsburgh 22, Pa.*

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

Keep
on the Right Course with
Leighton Knitting Machines

Knitted sweaters for sportswear or high-styled sweaters for the ladies has been a specialty with LEIGHTON MACHINES for years. The flexibility of the machines meet every change in marketing whether it be for the latest man-made yarns or the softest natural fibers. You are prepared when you are equipped with LEIGHTON CIRCULAR MACHINES.

Built Right . . . . to Knit Right

LEIGHTON MACHINE COMPANY
... MANCHESTER, NEW HAMPSHIRE ...
MFGRS. OF CIRCULAR LATCH NEEDLE KNITTING MACHINES

circular knife.

There are 15 net styles made. After they are cut, the pieces are folded in two and the edges sewn on a three-thread Merrow machine with nylon thread. Grommetts or fasteners are then put on the bags.

All power net is inspected over an inspecting frame, and the faults are entered on a chart. Such faults as holes, drop stitches, needles out, stop marks, dirty spots, and yarn defects are recorded. If too many damages are recorded, the machine the fabric came from is immediately checked.

The fabric is rolled up on the knitting machines on cardboard tubes, and a steel rod is slipped through the tube to handle the fabric roll. Two men handle each end of the rod. The fabric, after inspection, is rolled on aluminum tubes and wrapped in paper for shipment to the finisher.

Fablok's nylon power nets, which are used for two-way stretch girdles, are now finished with Lanonet finish.

POINTERS

CONTINUED FROM PAGE 135

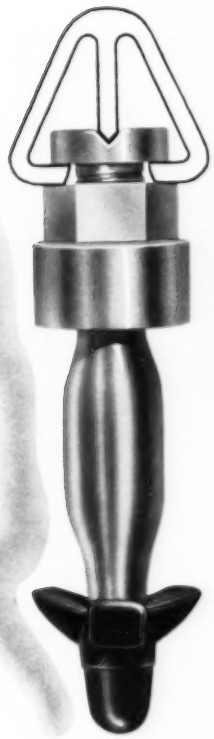
The ancient saying that familiarity breeds contempt can be applied to a supervisor's job. How many times do you walk by something that is not as it should be and yet because the condition has existed for some time, you are totally blind to it?

It often happens that something will grow so gradually that it becomes a part of the landscape until some outsider calls it to our attention. It can be an accumulation of lint on the walls, boxes or bags of waste material, pieces of scrap on the floor, employees loafing on the job, or any one of dozens of things or conditions. When it is pointed out, you wonder why you haven't noticed it before because now it stands out like a sore thumb.

It's a Skill, Not a Gift

Everybody agrees that the successful supervisor is alert and observant. But these traits are not gifts; they are skills that must be learned and practiced. To try to see or remember too much will confuse and bog down the most retentive memory. The best plan is to make a layout of the things that should be looked for and not try and see everything at once. Irrevelant details should be promptly forgotten, urgent matters attended to at once, and a note taken of any deferred details.

Many supervisors develop the habit of checking over their jobs a few items at a time. For instance, one inspection will cover machines idle,



Presenting

the all new
Tension-rite Bobbin Holder
by Pneumafil

Here at long last is an entirely new kind of bobbin holder—one that maintains the desired constant tension, eliminates roving stretch and prevents roving sluff off **WITHOUT THE USE OF DRAG ARMS**

This new design conforms to the LINT FREE CREEL—following the AIR FOIL principle which eliminates the accumulation of lint.

The Tension-rite bobbin holder is simple in construction—solid aluminum alloy with glasslike finish—exclusive Bolite bearing provides compensating tension—unique gripping head holds bobbin positively—bobbin creeled and removed easily—

BOBBIN CANNOT VIBRATE OFF!

There are only 5 pieces in the Tension-rite bobbin holder—nothing to go wrong—no parts subjected to excessive wear—a bobbin holder to give you a long lifetime of uninterrupted and satisfying service.

Let us show you this all new Tension-rite Bobbin holder

PNEUMAFIL CORPORATION
CHARLOTTE 8, NORTH CAROLINA
Atlanta, Georgia — Needham Heights, Mass.

Pneumafil Economizer Unit System
Central Air System
Central Material Recovery System
Lint Free Creel
Tension-Rite Bobbin Holder
Pneumastop ®
Pneumacard ®

PRODUCTS FOR PROGRESS >>

PNEUMAFIL ®

NOW! YOU CAN START YOUR PNEUMAFIL MODERNIZATION PROGRAM IN JUST 4 WEEKS

Up and down air discharge shown.

All combinations available.

In only 4 weeks you can be on your way to the real solution of modern spinning—A CLEAN SPINNING ROOM! The answer to a clean spinning room is the PNEUMAFIL ECONOMIZER SYSTEM and the LINT FREE CREEL.

The LINT FREE CREEL allows absolutely no lint accumulation, while the higher air volume (by actual test comparisons in mills) and powerful vacuum generated by the new PNEUMAFIL ECONOMIZER SYSTEM traps well over half the free lint in the room.

REMEMBER! IT'S THE HIGH AIR QUANTITY OF PNEUMAFIL EQUIPPED FRAMES THAT KEEPS THE FRAME CLEAN.

This clean and completely open type spinning frame makes extremely high drafts possible. Top quality production is maintained. Fewer ends down, fewer slubs and gouts, plus increased spinner assignments, naturally follow.

With the PNEUMAFIL ECONOMIZER SYSTEM and LINT FREE CREEL your mill is modern, clean, competitive and capable of matching quality with quality—best of all, it lowers your cost while improving your production.

Write us for the complete story.

PNEUMAFIL CORPORATION
CHARLOTTE 8, NORTH CAROLINA
ATLANTA, GEORGIA — NEEDHAM HEIGHTS, MASS.

Pneumafil Economizer Unit System
Central Air System
Central Material Recovery System
Lint Free Creel
Tension-Rite Bobbin Holder
Pneumastop ®
Pneumacard ®

PNEUMAFIL®

PRODUCTS FOR PROGRESS >>

Copyright 1956 Pneumafil Corporation

material on hand, and general operating conditions. The next trip across the job will be for the purpose of seeing how many employees are off the job or idle and what the relative humidity and temperature are for all parts of the room. The next inspection may be for general housekeeping and maintenance, and so on.

But be careful not to get into a rut with this piecemeal type of checking because you will get right back into the habit of seeing only what you want to see and be blind to everything else.

Keep Your Eyes and Mind Open

It's all right to concentrate on certain items if your mind and eyes are open to other things as well. The supervisor who constantly practices perceptive observation will be surprised at the skill he can develop. Things that his eye formerly flicked over will now cause a red flag to go up in his mind and demand attention. He can no longer complacently walk across his job with an "all's well" attitude, blindly stumbling over duties and details that are screaming for attention.

To boil the skill of successfully walking across the job to its essentials, we can summarize it this way:

1. Train your eye to observe and your mind to record.
2. Practice remembering; use notes to strengthen your memory.
3. Learn to evaluate what you see; act on the important, and disregard the trivial.
4. Develop a system of what to look for, where to look for it, and when to look.
5. Always keep an open mind, but don't become distracted or sidetracked.

QUESTIONS & ANSWERS

CONTINUED FROM PAGE 153

could offer toward a solution of your problem would be in the form of suggestions.

Judging from the sample submitted, the warp seems to be adequately sized and the shedding might possibly be reduced by increasing the relative humidity.

We noticed a filling kink in the sample, which could indicate too much power on the pick. If you have not already done so, we would suggest that you check the picking motion and get as soft and smooth a shuttle motion as possible.

Some of the trouble may be in the shedding motion. Try the smallest

Booth — Originators of STRIP-O-MATIC*

CARD CLOTHING

SUPR-O-TAPE

THE FIRST AND ONLY SUCCESSFUL FABRIC TAPE FOR CONDENSERS

Two years of actual mill use testifies to these amazing facts:

- Longer Life
- Extra Strength
- Increase Production
- Improve Quality
- Surface Won't Crack
- No Oiling Needed
- Yarn Uniformity Improved
- No Stretch—Less Sag
- Keep Square Edges
- Retain Full Width
- No Breaking In
- Permit Wider Range of Counts
- Fewer Ends Down
- Easily Cleaned
- Endless or Continuous
- Belt Hooks Hold
- Not Affected by Emulsions

CARD CLOTHING IN TWO TYPES
CONVENTIONAL CARD CLOTHING
QUALITY AND SERVICE FOR 65 YEARS

*Patented

BENJAMIN BOOTH COMPANY

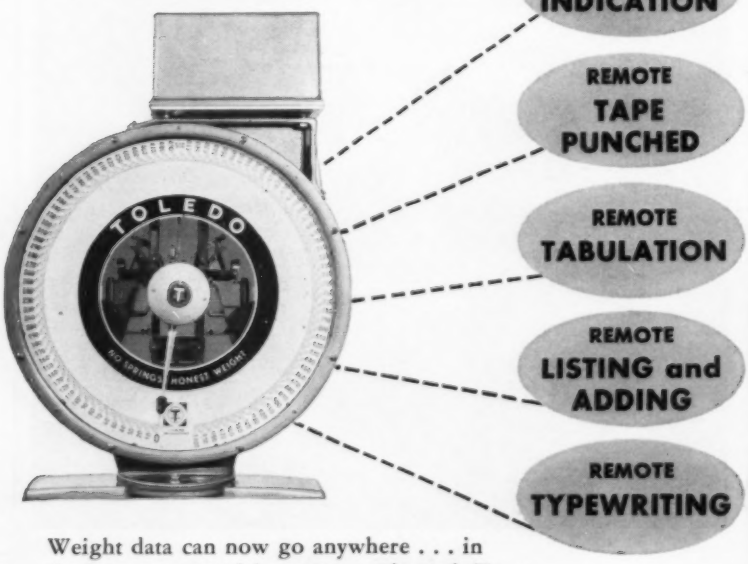
ALLEGHENY & JANNEY STS., PHILA., PA.

Booth

For more information, write direct or use Reader-Service post card.

NOW...*Electronic wings for your weights!*

...bringing you TOLEDO accuracy wherever you want it in the form you want it!



Weight data can now go anywhere . . . in the form most useful to you . . . through Toledo's remarkable new electronic system of remote data handling. Even though the weights originate in production, inspection, testing, shipping or receiving, the weight data travels instantly for remote digital recording in the form and location that best suits your needs. This greatly extends the capabilities of TOLEDOmation and assures for you maximum weight cost control and usability of weight data.

NEW AUTOMATIC BATCH CONTROL SYSTEM ... with Remote Digital Weight Recording

This Toledo cabinet interlocks 22 scales in an automatic batching system.

Through TOLEDOmation all ingredients are fed into successive batches in proper sequence, including operation of gates and feeders. In addition, all dials are automatically scanned and the digital weight data is recorded on an electric typewriter for each batch.

SEND FOR BOOKLET ON NEW TOLEDO REMOTE DIGITAL WEIGHTS . . . Toledo Scale Company, Toledo 1, Ohio

TOLEDO® HEADQUARTERS FOR **SCALES**

warp shed possible, with the bottom line of the shed barely clearing the shuttle race. Check the harness motion, and get smooth uniform opening of the shed.

Have you tried a filling-face satin? You may be able to control the warp better by reversing your harness build to 1 over 4. A highly polished reed with about 60% air space would relieve some of the crowding of the ends.

For a close weave, a good face can be obtained with a rather flat warp line. Changing some of the settings to take the strain off the bottom line of shed could help reduce the end breakage.

PACKAGING SHOW REPORT

CONTINUED FROM PAGE 104

Label Printer

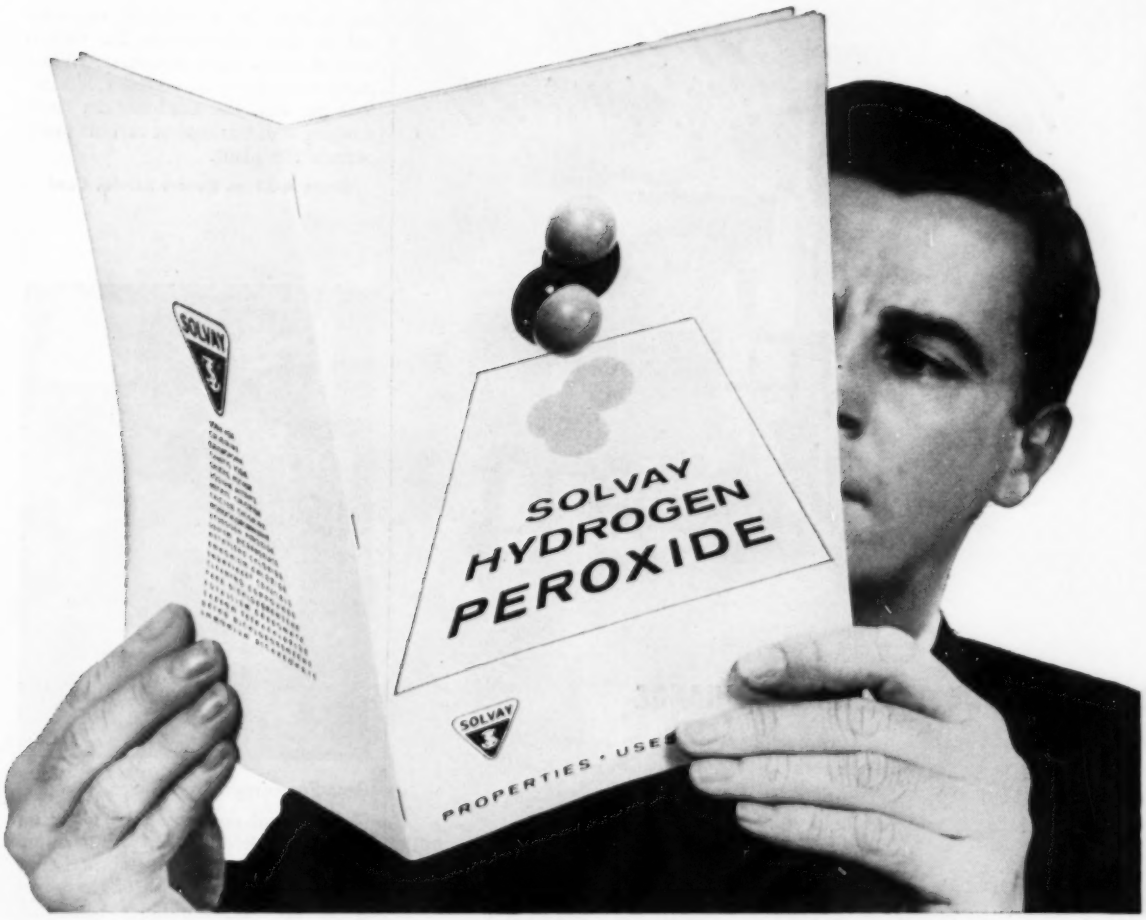
A complete unit for completing necessary data on preprinted labels was shown by Toledo Scale Co., Toledo, Ohio. Plates are supplied with metal type to denote the product; rubber type and metal chases are provided for printing in variables such as lot, shade, or size. Three lines of type are the maximum. A counter indicates the number of labels printed, and a label stacker will carry 200 finished labels. An attachment to feed rolls of labels is available.

Circle A-20 on Reader-Service Card

Carton-Forming Machine

A unit that makes cartons from flat stock was shown by the Industrial Div. of United Shoe Machinery Corp., Boston, Mass.

The cartons have double-end walls and consist of a box and cover. Pressure is applied hydraulically and glu-



HERE'S THE NEWEST BOOK ON HYDROGEN PEROXIDE!

New 24-Page Book Gives You the Facts

Just off the press, this latest SOLVAY® factbook on hydrogen peroxide contains sections on physical properties, chemical reactions, uses, containers, handling and storage. The biggest section covers these important uses of SOLVAY Hydrogen Peroxide:

- Textile and Pulp Bleaching
- Synthesis of Organic Chemicals
- Upgrading of Petroleum Hydrocarbons
- Epoxidation
- Hydroxylation
- Oxygen Generation
- Foam Rubber
- Porous Structural Materials
- Polymerization Catalyst

AMERICA'S FIRST PRODUCER OF ALKALIES — SOLVAY — 75th YEAR 1881-1956

Soda Ash • Snowflake® Crystals • Chlorine
Potassium Carbonate • Calcium Chloride
Sodium Bicarbonate • Ammonium Chloride
Ammonium Bicarbonate • Caustic Potash • Chloroform
Sodium Nitrite • Caustic Soda • Methyl Chloride
Cleaning Compounds • Methylene Chloride • Monochlorobenzene
Para-dichlorobenzene • Ortho-dichlorobenzene • Hydrogen Peroxide

Without cost or obligation, get your copy right away. Just fill in the coupon and mail *today*.

SOLVAY PROCESS DIVISION
ALLIED CHEMICAL & DYE CORPORATION
61 Broadway, New York 6, N. Y.

Allied Chemical

Gentlemen: Please send me without cost or obligation*

☐ Your new book on SOLVAY Hydrogen Peroxide

Name _____

Company _____

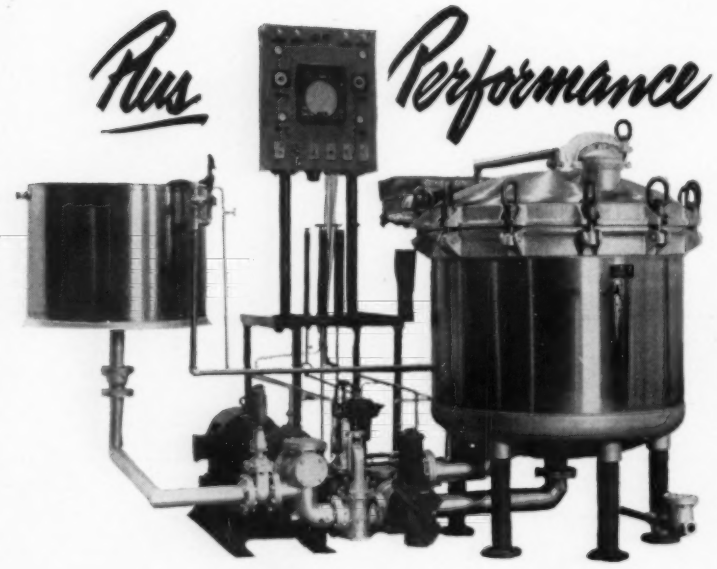
Title _____

Address _____

City _____ Zone _____ State _____

*In Western Hemisphere Countries.

BW-6

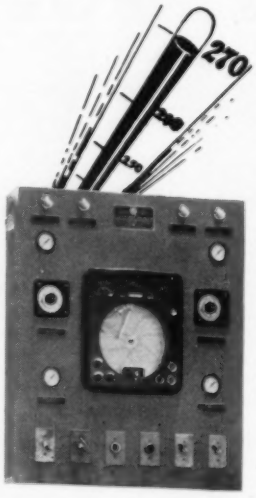


OVER EXTREME TEMPERATURE RANGE

Gaston County developed the *first* dyeing machines to successfully meet the high pressure, high temperature requirements of synthetic yarns. Continuous improvements *plus* Gaston County's rugged construction still make them first choice of the industry.

WIDER RANGE OF APPLICATION

These machines enable you to dye *any* fiber at any temperature . . . are available with closed add-dye tank and sampling device, in single or twin-kier set-ups.



QUALITY-PROVED CONTROLS

As pioneers in automatically controlled dyeing equipment, you get the advantages of Gaston County's positive control from the loading to the unloading of the kiers—the Robot Dyemaster for matching colors quickly and economically.

GASTON COUNTY DYEING MACHINE CO.

Pioneers in Automatically Controlled Dyeing Machinery

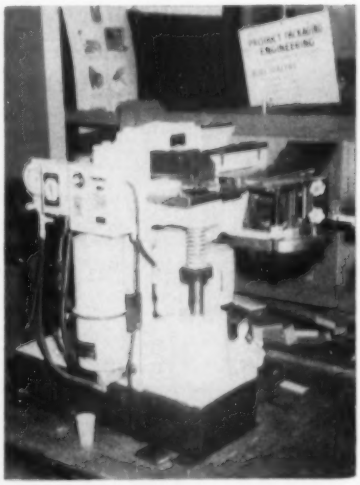
STANLEY NORTH CAROLINA

Gaston County Dyeing Machine Co.
Terminal Bldg., 68 Hudson St.
Hoboken, N. J., G. Lindner, Mgr.

The Rudel Machinery Co., Ltd.
14 St. James St. W., Montreal
137 Wellington St. W., Toronto

ing is done by a vertically mounted roll so that adjustments for various sizes of boxes are unnecessary. When production demands exceed 1,000 cartons per day, the machine can show a saving over the cost of cartons made outside the plant.

Circle A-21 on Reader-Service Card



Box-Forming Machine

Boxes and covers can be made on the Model BM33, Type B machine shown by Hoage Sprague Corp., Lynn, Mass. Maximum width of the boxes is 10 ins. and minimum width 2½ ins. Maximum depth is 7 ins. and minimum depth ½ in. Length is unlimited. Hydraulic pressure forms the package; change-over from boxes to tops requires about one minute. Production is to 3,000 units per day.

Circle A-22 on Reader-Service Card

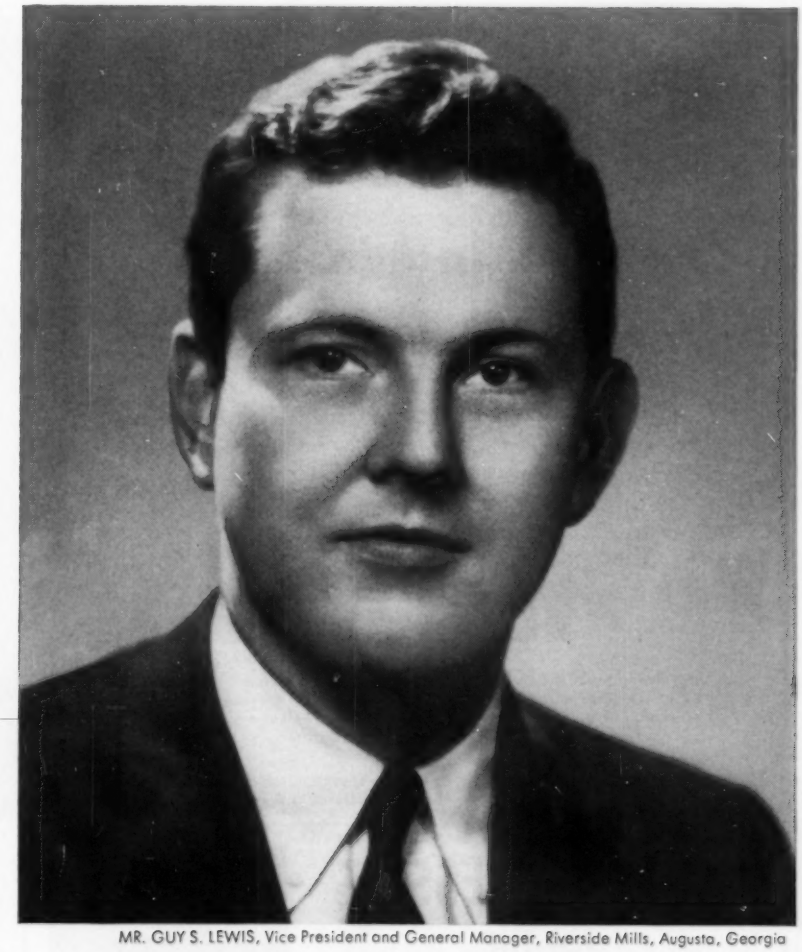
DEVELOPMENTS TO WATCH

CONTINUED FROM PAGE 8

WORSTED FABRICS . . . may become more popular in 1956, reversing the five-year trend that has favored woolens. The Wool Bureau reported a 21% gain in raw wool processed on the worsted system during January and February, 1956, compared with the corresponding 1955 period. Wool processed on the woolen system during this period showed a gain of only 8% over the 1955 period. Total gain of apparel wool used during the first two months of 1956 was 15% over the first two months of 1955.

CONTINUED ON PAGE 194

An Eye to the Future... An Ear to the Ground



MR. GUY S. LEWIS, Vice President and General Manager, Riverside Mills, Augusta, Georgia

"You cannot stand still in this business... either you move forward or you disappear from sight."

That's the business philosophy of the Riverside Mills, as interpreted by Mr. Guy S. Lewis, Vice President and General Manager.
And it's an important reason why Riverside Mills is a leading source of new ideas and new products in yarns for the floor covering field.

"The New Nylon Staple has performed admirably in every respect. In addition, we are particularly impressed by IRC's research efforts and results. Their new twist-setting techniques are particularly noteworthy and open new sales horizons which are so important to us here at Riverside."

THE NEW Nylon Staple

I·R·C *Industrial Rayon Corporation*
Sales Offices: 500 Fifth Avenue, New York 36, N. Y.
627 Guilford Bldg., Greensboro, N. C.

For more information, write direct or use Reader-Service post card.

STEEL

Every kind in stock

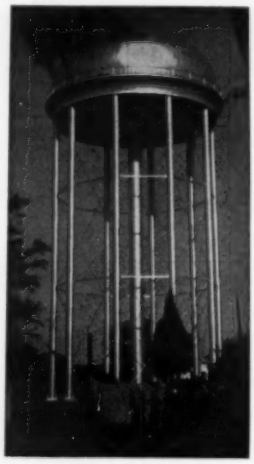
Immediate shipment

Principal Products: Bars, Structurals, Plates, Sheets, Tubing . . . Carbon, Alloy and Stainless Steels, Machinery and Tools, etc.

RYERSON

Joseph T. Ryerson & Son, Inc. Plants at: New York • Boston • Wallingford, Conn. • Philadelphia • Charlotte, N. C. • Cincinnati • Cleveland • Detroit Pittsburgh • Buffalo • Chicago • Milwaukee • St. Louis • Los Angeles San Francisco • Spokane • Seattle

TANKS AND VESSELS FOR THE TEXTILE INDUSTRY



● COLE builds elevated tanks and vessels to your specifications — dye-vats, kiers, starch-kettles, acid tanks, jib-boxes, or other processing vessels for the finishing and dyeing industry . . . in stainless steel, nickel-clad steel, or of standard steel lined with Monel metal.

Our long experience in the design and fabrication of vessels for the textile industry may be of help to you. Write for latest COLE catalog—*Tank Talk.*

Established 1854

R. D. COLE Manufacturing Co., Newnan, Ga.

- TANKS
- TOWERS
- CYLINDERS
- VESSELS
- STANDPIPES

BURLAP BAGS . . . will look better and last longer in the future. Bemis Bro. Bag Co., St. Louis, Mo., has perfected a new overstitched side seam that eliminates the raveling of loose filling on the cut edges of burlap bagging. Loose threads can clog farm machinery and influence farmers to purchase grains and feeds in paper bags instead of woven-fabric bags. This development may open a wider market for cloth bags in general.

News Briefs

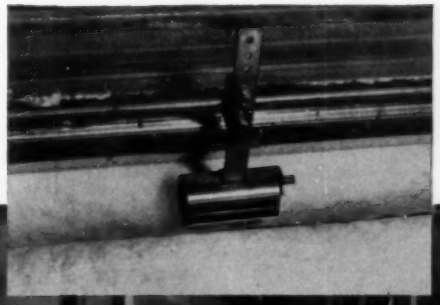
WEAVING MACHINES . . . are now being produced in East Germany to weave cotton and other staple fibers. Already, 100 of these machines are in production in the Bulgarian textile industry, and 800 more have been ordered for 1956.

POLISH TEXTILE MACHINERY . . . is now being sold abroad for the first time. Brazil is Poland's first customer.

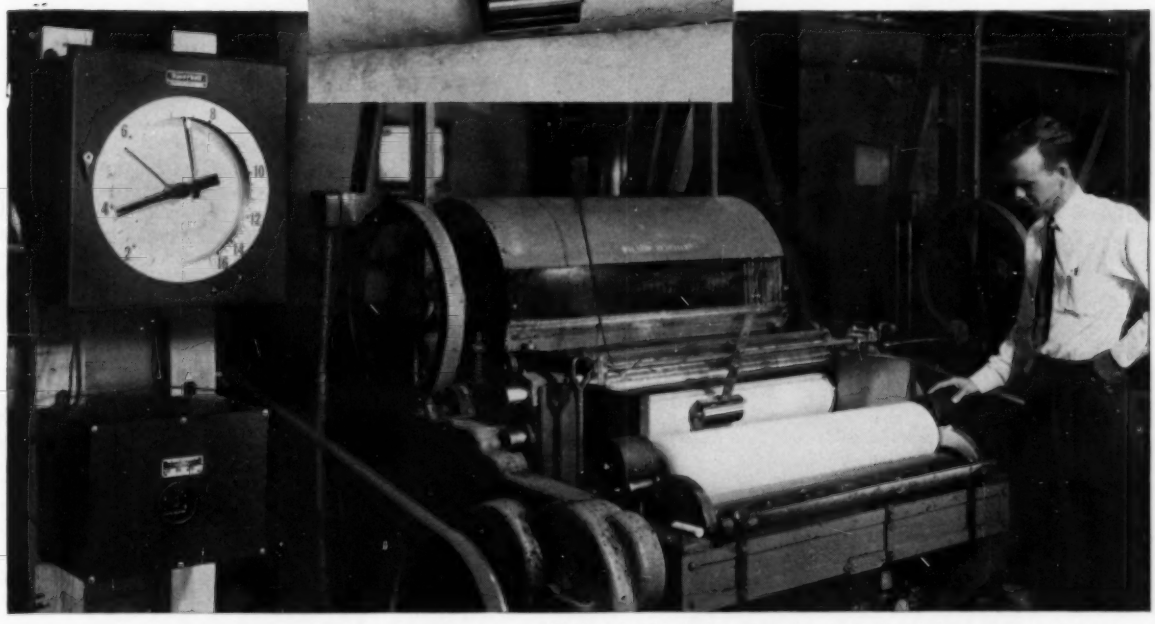
TEXTILE MARKETS . . . could increase 75% by 1965 "if the industry takes full advantage of the opportunities inherent in our dynamic and growing economy," says Amos H. Johnson, vice-president and director of research for J. Walter Thompson Co., a large advertising agency. He urges the industry, through more intensive promotion, to strive for a part of the average family's income left over after basic living costs are met.

2,150,000 BALES OF COTTON . . . will be imported by Japan in 1956. Approximately 75% will come from the dollar area and 25% from the sterling zone. Last year, Japan imported 2,020,000 bales.

BRITISH TEXTILE MILLS . . . are finding the going rough. In 1955, the loom average was only 37.57 hrs. of operation per week. This figure compares with 112.03 hrs. in the United States. In England, only 44,188 cotton looms of a total of 333,820 are automatic. The managing director of a Nottingham firm of textile engineers estimates that with only 10% more looms, the U. S. could produce four times the British yardage.



Moisture content is sensed by means of this detector roll, readily mounted in contact with the cotton lap.



***Moist-O-Graph** instrument, mounted at left, records moisture content of picker laps, at Joanna Cotton Mills, Joanna, S. C.*

New way to improve uniformity of cotton lap

You can now get continuous, automatic recording of lap moisture content at the picker . . . with the electronic *Moist-O-Graph* system.

It's as simple as this. To keep constant cotton content in picker laps, you have to know how much moisture is present. And you need this information accurately, immediately and continuously.

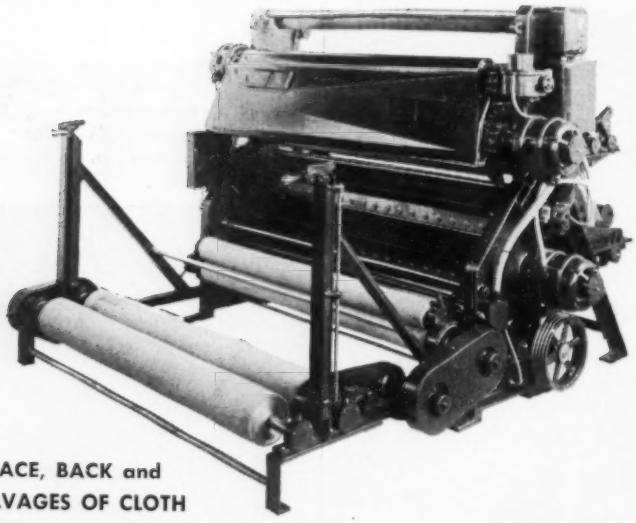
That's exactly what you get with the *Moist-O-Graph* system. Your machine operators get not only a readily visible indication of lap moisture, but also a continuous record that shows trends. They get accurate information from which they can make adjustments to the picker to maintain constant lap weight of cotton on a "bone dry" basis. This is essential because any variations at this *initial* step in the process would be carried thru to the finished product.

This is the latest application of the electronic *Moist-O-Graph* . . . long known in the textile industry for control of percent regain on slashers. Simple, rugged and dependable, it opens up a new way to reduce waste, boost efficiency, and cut costs.

Find out how you can use this new development in your mill; call your local Honeywell sales engineer . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, Wayne and Windrim Avenues, Philadelphia 44, Pa.—in Canada, Toronto 17, Ontario.

MINNEAPOLIS
Honeywell
BROWN INSTRUMENTS
First in Controls



CLEAN FACE, BACK and BOTH SELVAGES OF CLOTH IN A HERMAS SHEAR *AUTOMATICALLY*

Removes all hanging selvage ends at one pass at rate of 150 yards per minute.

Do a perfect cleaning job on up to 150,000 yards of cloth a week.

One important mill has handled its entire production of 450,000 yards a week with a single Hermas Shear! It has operated that shear three shifts for eight years. In all that time it has not had to stop the shear ONCE to replace a single part!

For performance like this investigate the Hermas Shear.

Write today for brochure. No obligation.

HERMAS Machine Co. 229 Royal Avenue Hawthorne, New Jersey

PENFORD FINISHING GUMS will popularize your permanent textile finishes

These new highly substituted starch ethers have numerous advantages

The combination of Penford Finishing Gums and ureaformaldehyde or melamine resins means fabrics can be stabilized against shrinkage, improved in crease resistance, and be given a permanent crisp or bulky hand.

No matter what type of cotton or rayon goods requires finishing, you can get better results with Penford Finishing Gums. Call upon Penick & Ford's Technical Sales Service Engineers for assistance in determining the Penford Finishing Gum that is best suited for the desired finish on your finishing equipment. Valuable brochure is available upon request. Send for your copy now. (U. S. Patent Nos. 2,516,632; 2,516,633; 2,516,634)

PENICK & FORD, LTD.
INCORPORATED
420 LEXINGTON AVE., NEW YORK 17, N.Y.; 1831 MARIETTA BLVD., ATLANTA, GA.;
CEDAR RAPIDS, IOWA; 18 CALIFORNIA ST., SAN FRANCISCO 11, CALIF.

PRINTING CLOTH

CONTINUED FROM PAGE 127

patterns. Wooden rolls are still used for some effects, but some patterns are more successfully applied from rolls made of rubber-covered metal or from all-metal rolls made of aluminum alloy. Standard repeats are 19, 22, 24½, 27, and 36 ins.

On the wooden rolls, patterns are formed from brass strips that are driven into the wood base. To get small circles, leaves, or other forms, the brass is curved to the required outline and the enclosed space filled with felt. Larger blotches are generally printed from rubber-surfaced rolls that may have the pattern applied to the roll, but in some cases the pattern may be routed out of the solid rubber.

The aluminum-alloy rolls are made by routing out all the metal except the pattern wanted. Usually the pattern stands out about ⅜ in. from the roll surface.

Because the printing system requires very light pressures, the rolls rarely show any wear even after long service. Obsolescence is the main reason for resurfacing, and old rolls can be given new patterns to work on smaller repeats.

Although this method of printing applies considerably more color than engraved-roll methods, the keeping qualities of the pigment-resin mixes are such that leftovers can be used up in new color combinations. Color matching is simplified by the fact that there is little or no change in color in the process, and color held over for several days will print the same as when first made up.

HOSIERY PULL THREADS

CONTINUED FROM PAGE 113

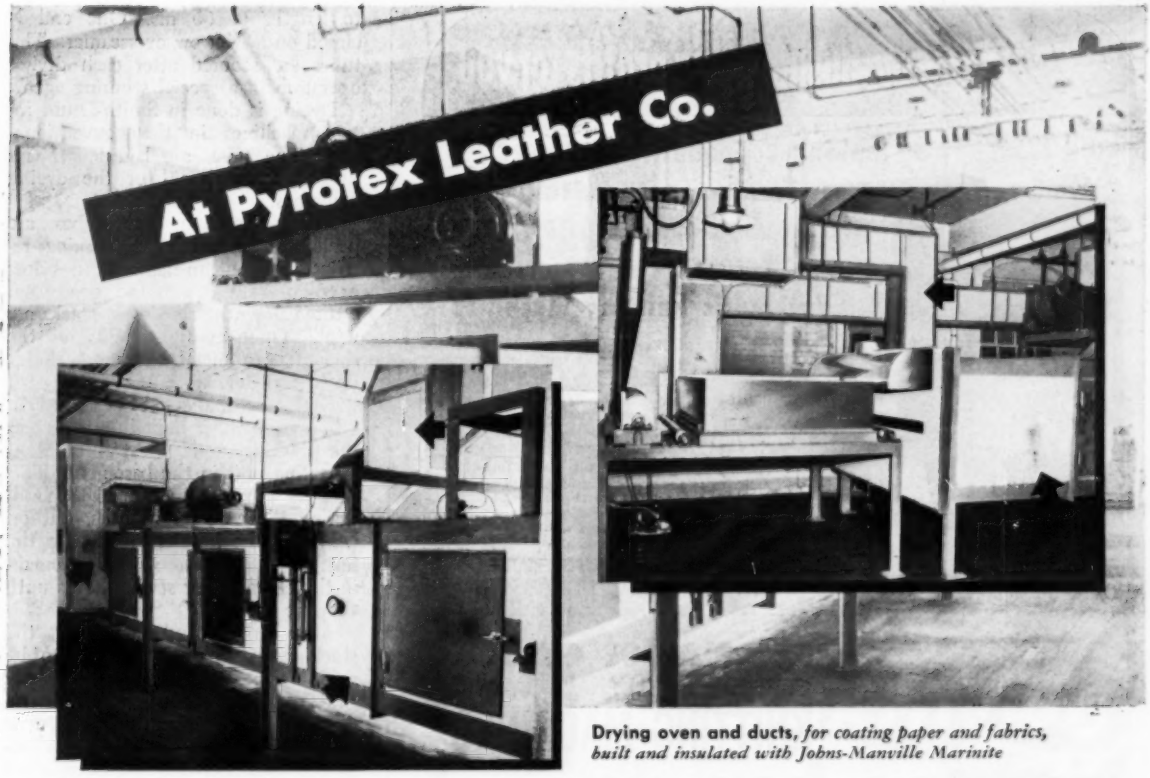
fore removing the stockings from the forms.

After removal from the preboarding forms, 12 stockings are laid on the operator's work table. The welt and toe are turned to the center and the stockings are folded over once and rolled in a bundle.

After the stockings are allowed to cool for a few moments, they are put into knitted cotton tubes to be dyed. A copper cylinder fixed to a bracket on the table helps the operator place the stockings in the tube without damage.

The cotton tube is stretched over the cylinder, and each ½-doz. pairs of stockings is pushed in the tube as it is preboarded until there are 3 doz. stockings in the tube.

The cotton tubes are made on circular rib knitting machines and cut



Drying oven and ducts, *for coating paper and fabrics, built and insulated with Johns-Manville Marinite*

"Production increased... costs reduced"

with drying ovens built of J-M Marinite the non-corroding, structural insulating material

At Pyrotex Leather Company, Leominster, Mass., drying is one of the most important operations in the Company's manufacture of coated papers and fabrics. In recent years Pyrotex has constructed drying ovens of Johns-Manville Marinite*—with outstanding success.

They find that Marinite permits operation at higher temperatures . . . resulting in faster drying, greater output and lower production costs. Marinite also improves quality control because temperatures can be more accurately maintained. And Marinite requires practically no maintenance, needs no painting.

Made of Asbestos, Johns-Manville Marinite has many advantages for manufacturers of driers, ovens and other high temperature equipment. It combines structural strength with efficient thermal insulation. It simplifies construction, builds and insulates in one step. It speeds production because it provides uniform heat . . . better heat control . . . faster heating.

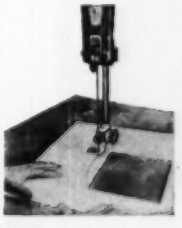
Marinite offers unexcelled maintenance advantages, too, because it has almost unlimited service life. It does not rot or corrode . . . it does not disintegrate in water . . . it needs no protective facing for normal use. To learn how Marinite can improve your equipment and reduce costs, write Johns-Manville, Box 60, New York 16, New York. In Canada, 199 Bay Street, Toronto 1, Ontario.

JOHNS-MANVILLE JM PRODUCTS

*Marinite is a registered Johns-Manville trade mark.

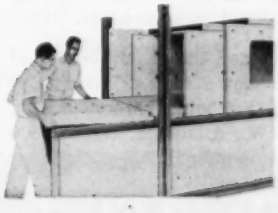
MARINITE builds and insulates in one operation

large, structurally strong sheets afford maximum heat control



MARINITE is easily worked

may be cut, drilled, shaped and fitted with ordinary woodworking tools



MARINITE speeds construction

can be erected without costly equipment—requires minimum angle-iron framing

Johns-Manville FIRST IN INSULATION

MATERIALS • ENGINEERING • APPLICATION

big business, big profits for you

making top quality CHILDREN'S SWEATERS . . . economically, on performance-proven ORDNANCE OGA-OTA circular, fully automatic knitting machines

● Manufacturers of children's sweaters, like manufacturers of men's and women's knitted outerwear, enthusiastically endorse and recommend ORDNANCE equipment. They praise its low operating costs—based on total production of FIRST QUALITY MERCHANDISE—top-speed change-overs that permit the style changes necessary for volume sales! Install OGA or OTA machines and

you safely invest in equipment of proven performance; why, then, risk on experiment?

NOW, with new, exclusive refinements and added operating range OGA and OTA machines are your soundest investment in equipment. ● Investigate the all-new 32" diameter machines to produce coarser gauge goods as well as the finer gauges usually made on smaller diameter machines.

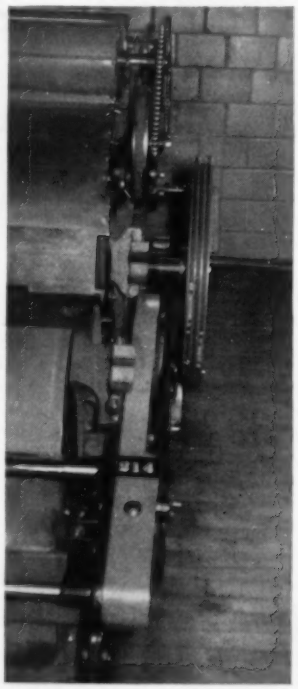
ORDNANCE GAUGE CO.
Amber & Hagert Sts.
Philadelphia 25, Pa.

SALES REPRESENTATIVE
MAC. M. ROTHKOPF
317 Bushwick Ave., Brooklyn, N.Y.

OGA OTA ORDNANCE GAUGE CIRCULAR, FULLY AUTOMATIC KNITTING MACHINES

HAE-OG197-256

Find the motor driving this card?



No overhead line shafting . . . no motor overhang between machines—where's the motor?

No, you can't see the motor because it's a 1½ hp., 900 RPM Fairbanks-Morse Axial Air Gap Textile Motor that fits completely within the over-all dimensions of the card.

This compact motor (10½" including shaft) can eliminate for you the dirt and inefficiencies of overhead shafting. There are no clutches, no gears. Using a stock V-belt drive, this lint-free motor brings the card up to 165 RPM in 30 seconds.

No, you can't see the motor here, but we'll be glad to show it to you. Write today to Dept. TW-6, Fairbanks, Morse & Co., 760 Lee St., S.W., Atlanta 3, Ga., or 600 South Michigan Avenue, Chicago 5, Illinois.

FAIRBANKS-MORSE
a name worth remembering when you want the BEST

ELECTRIC MOTORS AND GENERATORS • DIESEL LOCOMOTIVES AND ENGINES • PUMPS
SCALES • RAIL CARS • HOME WATER SERVICE EQUIPMENT • MOWERS • MAGNETOS

to lengths of 66 ins. One end is closed on a Merrow overseamer. The tubes are scoured after each drying operation in a special scouring agent.

Dyeing is done in Smith-Drum rotary machines in the conventional way. The tubes are laid lengthwise in the compartment of the dyeing machines.

After extraction, the tubes are peeled back and the dyed stockings removed and put on flat trays in ½-doz. or 3-doz. stacks. If the goods are wanted urgently, the ½-doz. stacks are used. These trays are laid on the shelves of a metal truck that holds up to 400 doz. stockings.

Drying of the stockings is done in a hot-air chamber built in a corner of the finishing room. Heat enters from a heating unit in the basement. This heat is exhausted through the wall during the summer months, but on cold days the heat is diverted to the finishing room. The stockings remain in the chamber for several hours until they are dry.

After pairing and inspecting, the stockings are placed in racks to be made up into orders for shipment.

When a new idea at Woosley is discovered, a management meeting is held and sometimes the idea is improved. Suppliers are often consulted when ideas are formed. The system changes as new methods are discovered, and management will never be satisfied while pull threads are still being made.

FIBER PROPERTIES

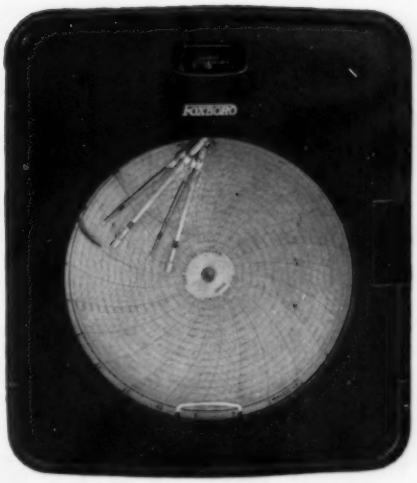
CONTINUED FROM PAGE 105

cottons represented the extremes in this series of tests. For example, the actual strength of 14s yarn from the Acala cotton averaged 5 lbs., less than was expected on the basis of the actual 22s yarn strength. The differences varied appreciably in magnitude with the date of harvesting and individual lots of cotton.

On the other hand, 14s yarn made from the Coker cotton averaged 2.4 lbs. greater actual strength than expected on the basis of the actual strength of the 22s yarn. The differences here also varied in magnitude with the date of harvesting.

The strength level of 14s yarn for the other varieties tested showed intermediate differentials between the Acala and the Coker varieties.

The occurrence of plus-and-minus differentials in strengths of 14s yarn where the data were stratified by variety and date of harvesting explains mathematically the close over-all agreement in levels of strength for the 14s



WET AND DRY BULB INSTRUMENTS

These Foxboro instruments give separate wet and dry bulb records on the same chart . . . in dry bulb ranges from 32°F. to 300°F. . . . wet bulb ranges to 212°F. They are exceptionally accurate and stable. Bulbs can be placed up to 200 feet from the instrument. Available as recorders, or air operated (Model 40) and electric (Rotax) controllers, including multi-zone and time-humidity controllers.

DIRECT-READING DEW POINT INSTRUMENTS

Foxboro recently introduced the first simple, continuous dew point measuring instruments for industrial use. Their patented humidity sensitive element, the "Dewcel", requires no water box or moving air. Accuracy is unimpaired by dust or lint. Foxboro recording and controlling instruments, used with the "Dewcel", give direct readings from —50°F. to 142°F. dewpoint, at dry bulb temperatures up to 220°F. Readings easily converted to absolute or relative humidity. Foxboro instruments for dew point include liquid expansion type and electronic type recorders and controllers . . . with either pneumatic or electric control action. The Multi-Record Dynalog® for dew point provides up to 6 records on a single round chart.

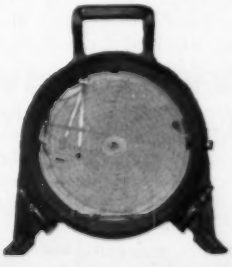
*Reg. U. S. Pat. Off.

better measurement and control of humidity

DIRECT-READING RELATIVE HUMIDITY INSTRUMENTS

Direct-reading relative humidity hygroscopic instruments are designed to operate in temperatures up to 140°F. They are available for recording (including the portable model shown here), and controlling (pneumatic M-40, or electric *Rotax*, operated). Sensitive, accurate, reliable.

Combination temperature and relative humidity recorders (0-100°F and 0-100° R.H.) also available for prompt shipment.



Ever since it introduced the first successful long-distance wet-and-dry bulb psychrometer, Foxboro has pioneered in the development of new and improved methods for the measurement and control of humidity. In its knowledge of textile process requirements, and its complete line of better-engineered instruments, there's more than likely the ideal solution to your own problem.

Why not write for complete information, or talk it over with a Foxboro Engineer, now? **The Foxboro Company, 846 Neponset Ave., Foxboro, Mass., U. S. A.**

FOXBORO REG. U. S. PAT. OFF. **HUMIDITY INSTRUMENTS**

FACTORIES IN THE UNITED STATES, CANADA AND ENGLAND

MACHINES FOR YARNS • TWINES • CORDS • ROPES

SPECIALIZED EXPERIENCE
TWISTING • STRANDING
FORMING • LAYING
COTTON • JUTE • MANILA • SISAL
NYLON • DACRON • ORLON • SARAN
PAPER • POLYETHYLENE • GLASS
HASKELL-DAWES MACHINE COMPANY

H·D

HASKELL-DAWES MACHINE COMPANY
2231 E. ONTARIO STREET, PHILADELPHIA 34, PENNA.

picture from plant of LUISA SPAGNOLI
Perugia, Italy
—one of our foreign users

TOMPKINS
over 110 years' proven performance—
LATCH AND SPRING NEEDLE
KNITTING MACHINES

"mostest runnin' knittin' machines in the plant!"

The Head Knitter of an U. S. mill made this brief yet factual statement. Knitters in the know are quick to substantiate the comment, with good reason. The Tompkins record stands undisputed . . . over 110 years of proven money-makers to the Knitting Industry.

We see some Tompkins machines running that are 70 years old — still going strong despite their outdated performance in comparison with new model Tompkins machines. It's like seeing an old Model T alongside a new '56 Ford! Let us help you put in a modernization plan.

— ESTABLISHED 1864 —
TOMPKINS BROS. CO.
623 Oneida St. • Syracuse 4, N. Y.

TOMPKINS
MODERN SPRING NEEDLE
KNITTING MACHINE
with changeable feeds to make
• Fleece Coatings • Sweat Shirts
• Jersey • Terry • Patterns
• Stripes • Lastex Inlay
—all on the same machine!

and 22s yarn from the entire series of 277 cottons. If the stratification method of approach had not been used in this test, the plus-and-minus relations in reference to variety and date of harvesting would not have been realized.

The total drafts and proportions of drafts used in processing the 14s yarn as related to the lower limits of draft obtained on the roving and spinning frames used, appear to have influenced the relations studied. Further, it appears that the effect of these drafting factors forced out of line the expected evaluations for the relative importance of the upper-half mean length and fiber strength to the strength of the 14s yarn compared to the strengths of the 22s, 36s, and 50s yarn.

High Tensile Strength

A question arises as to the explanation for the differentials in reaction of the Acala 1517 and the Coker 100 Wilt cottons during the processing of the 14s yarn spun from these cottons compared with the other yarn sizes. The most outstanding fiber property of the Acala is high tensile strength. The average fiber strength for the 24 lots was 90,400 lbs. per sq. in., which varied by harvesting dates from 87,600 lbs. to 92,100 lbs.

Whether by coincidence or by association with some other fiber property not considered, the expected strength of the 14s yarn failed to be realized by the processing organization used.

On the other hand, the fiber strength for the 36 lots of Coker cotton averaged 77,300 lbs. per sq. in., which varied by harvest dates from 76,400 to 78,000 lbs. Those values of fiber strength associated with the higher strength of the 14s yarn are appreciably lower than the fiber strength of the Acala cotton.

The 3,267 lots of yarn tested were 14s to 60s warp singles that had been carded and long-draft processed with a semihard twist.

Supplementary analyses were made from data representing 1,108 lots of yarn from 277 cottons of the 1948 crop, stratified by variety and three dates of harvesting.

The six elements of raw-cotton quality, correlated as independent variables, are upper-half mean length, length-uniformity ratio, fiber fineness (Micronaire weight per inch), fiber strength (Pressley at zero gauge), percentage of mature fibers (standard method), and grade index.

Dependent variables used in the correlation analysis are: actual and converted yarn strength for each yarn, a series of values representing different ranges of yarn size, and number-strength product collectively of all yarn sizes studied.

This M&W Roller Type tenter clip has been FIRST CHOICE more than 500,000 times!

Roller Type tenter clips are *NOT* new

M&W Roller Clips have set performance standards for 15 years.

M&W No. 11 Tenter Clips in use total more than half a million — giving perfect results wherever installed.

M&W No. 11 Roller Clips have set the production pace — up to 250 yards per minute — for years.

M&W has specialized in engineering, refining and manufacturing Roller Clips since 1940.

M&W Clips have all attributes needed for reduced maintenance cost, efficient operation, cloth protection, long chain life, precise performance.

M&W Clips are engineered for every type of operation, equipment and fabric.

When buying new or replacement tenter chains, remember these facts and invest in a thoroughly tested, tried and true, product.

"There are no weak links in an M & W Tenter Clip Chain"

M&W

Send for complete data . . . no obligation

MARSHALL and WILLIAMS CORPORATION
PROVIDENCE, R. I. • GREENVILLE, S. C. • NEW YORK, N. Y.

You've never seen a pipe vise handy as this 40A Tristand by RIDGID

with built-in folding tray...

all one unit, no loose parts, easy to set up or fold up for carrying . . . and tray makes it rigid as a stubborn mule!

Vise overhangs front legs so threader handles swing clear . . . Extra light, strong . . . Big vise base, pipe and conduit benders, pipe rest, tool slots, ceiling brace screw . . . efficient vise with LonGrip jaws—it's got everything!

See and try 40A Tristand, ⅛" to 2½", at your Supply House!

"Threaded Pipe—*It's Tight—It's Best* —Costs Less"

RIDGID Work-Saver Pipe Tools

The Ridge Tool Company Elyria, Ohio, U.S.A.

AURORA® Vertical Sump Pumps are 'TOPS'

HEAVY DUTY and LIGHT DUTY

ALSO NON-CLOG SIZES UP TO 8"

For all sump drainage; liquids handling in industry; transfer of chemical and hot liquids; handling viscous or high temperature liquids; boiler blow-off; heating returns etc.; also for handling screened and unscreened sewage and industrial waste.

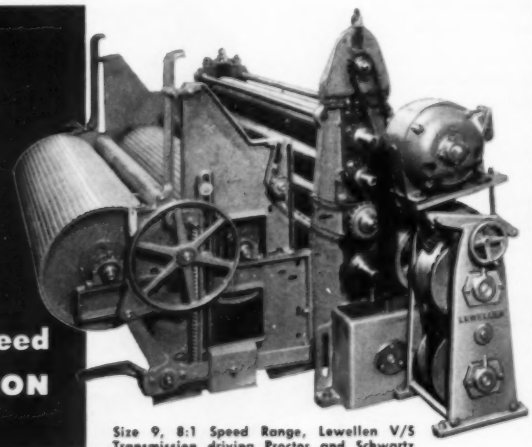
Write for
BULLETIN 104
(Heavy Duty & Non Clog)
BULLETIN 103
(Light Duty)

Write TODAY for CONDENSED CATALOG "M"

DISTRIBUTORS IN PRINCIPAL CITIES

AURORA PUMP DIVISION
THE NEW YORK AIR BRAKE COMPANY
31 LOUCKS STREET • AURORA • ILLINOIS
INTERNATIONAL SALES OFFICE, 90 WEST ST., NEW YORK 6, N. Y.

SELECTIVE LAPPING SPEEDS with LEWELLEN variable speed TRANSMISSION



Size 9, 8:1 Speed Range, Lewellen V/S Transmission driving Proctor and Schwartz #602 Cross Lapper, Compression Rolls, and Winding Head.

Selective operating speed is frequently the most direct and effective control of the textile process.

With the Lewellen V/S Transmission, speeds are finely selective, INFINITELY adjustable.

All speeds are immediately available, conveniently obtained, and accurately maintained.

A choice of four standard units—
with accessories and controls
in speed ranges to 20:1
in ratings to 60 horsepower
adapts the Lewellen to any textile equipment.

For every need in Variable Speed, consult the Factory freely.

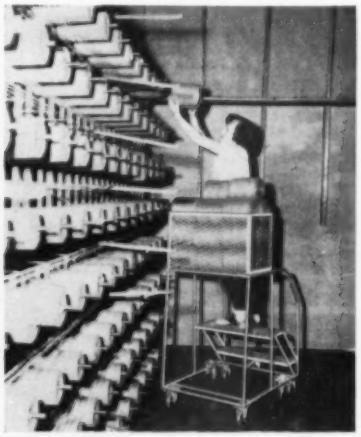
Write for V/S Transmission Catalog No. 65—Variable Pulley Catalog No. 60A.

LEWELLEN MANUFACTURING COMPANY, COLUMBUS, IND.

DISTRIBUTORS IN ALL INDUSTRIAL AREAS. IN CANADA—PEERLESS ENGINEERING SALES LTD., TORONTO - MONTREAL

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 148



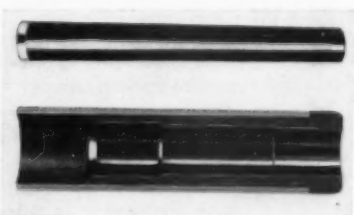
Creeling Ladder

Ballymore Co., Wayne, Pa., has announced a creeling ladder to facilitate textile handling. The unit consists of a mobile ladder with a large metal basket-type container mounted on top.

A quantity of cheeses or other items can be quickly and easily carried from one location to another. High places can be reached safely without awkward straining. The ladder rolls on 4-in. ball-bearing casters and locks to the floor tightly by a foot-operated lock.

The basket is 14 ins. deep, 16 ins. high, and 25½ ins. wide. The capacity is more than 105 lbs. The creeling ladder is 54 ins. high, 25½ ins. wide, and 34 ins. deep at the base.

Circle T-21 on Reader-Service Card



Bobbin For SG-1 Frame

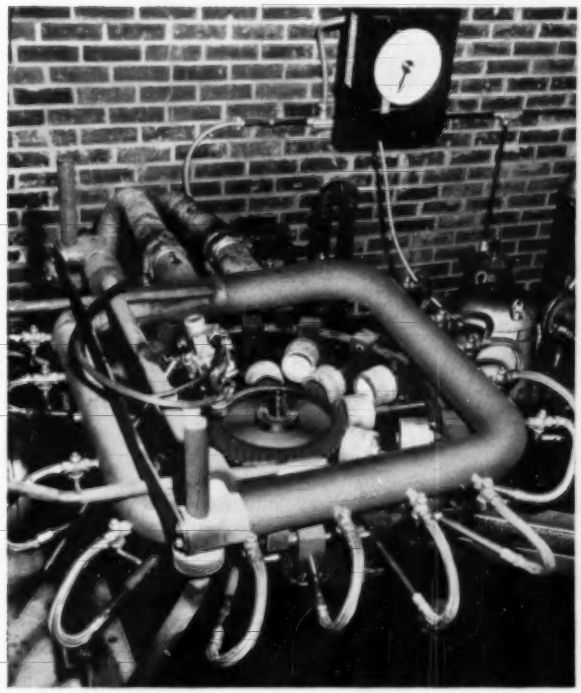
A bobbin for the Saco-Lowell Gwaltney SG-1 spinning frame, featuring a thermosetting-plastic tip and seat section, has been announced by American Paper Tube Co., Woonsocket, R. I.

The tip and seat section are fused with the synthetic tube into a unit of permanent precision fit and alignment. The homogeneous composition prevents warping, splitting, or chipping; and the bobbin is not affected by heat, friction, or moisture.

Circle T-22 on Reader-Service Card

CONTINUED ON PAGE 204

...add YEARS to your GEARS



MEMBER AMERICAN GEAR MANUFACTURERS ASSOCIATION

Now you can have heat-treated steel gears giving FOUR TIMES more life than similar gears which are untreated or poorly treated.

The new, completely scientific heating-treating installation shown here, assures uniformly hardened gears up to 17" diameter by 6" face. The gear is rotated in electronically controlled radiant heat, thus providing 100% uniformity of treatment from gear to gear as well as from tooth to tooth. Only the web and bore remain soft, insuring a minimum of distortion.

Get information or quotation about the Ferguson Gear process that will save you trouble, time and money. Contact your nearest Ferguson Sales Engineer, or write direct to Ferguson Gear Company, Gastonia, N. C.

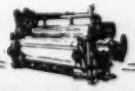
FERGUSON GEAR COMPANY
GASTONIA, NORTH CAROLINA • TEL. UN 4-2626

SALES OFFICES
GREENSBORO, N. C. — B. T. GLADDEN
GASTONIA, N. C. — R. W. LYNCH — TEL. 3-2462 — DENVER, N. C.
GREENVILLE, S. C. — HAROLD H. HARRISON
LA GRANGE, GA. — JOHN FERGUSON — TEL. 5040, P. O. BOX 486

TIME TO PLAN!

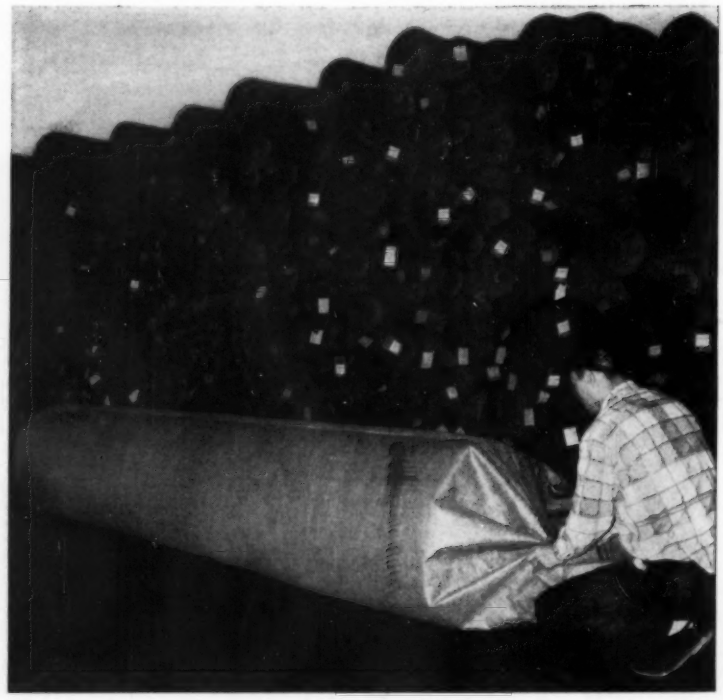
Today's textile pattern calls for quick, efficient, *economical* adjustments in plants and machinery . . . to improve your competitive position. We are leading specialists in buying, selling, liquidations and appraisals . . . we offer a professional approach based on one of the broadest backgrounds in the world of textiles.

Contact us for further information and catalogues of current offerings. All inquiries treated in confidence.



INTERTEX Corporation

270 Madison Ave., New York, N. Y. • 440 Rodman St., Fall River, Mass.



Bemis Covers are fast and easy to use. A latex adhesive is brushed through the pores of the uncoated burlap overlap, forming an especially strong seal. Then the ends of the cover are wire-tied. That's all there is to it.

Bemis Laminated Shipping Covers will save you labor—time—money and protect your carpets and rugs

Sturdy Bemis Laminated Covers for shipping carpets and rugs are quick and easy to apply . . . so you save labor, time *and* money. The laminated material (burlap and paper laminated with asphalt) comes in sheets or rolls, so you save valuable storage space. The puncture- and moisture-resistant material gives special protection to your carpets and rugs. And the covers fit so snugly that the roll can't telescope and damage the tuft and pile.

Ask for *details* of the benefits you get from Bemis covers.

Bemis Products for the Carpet and Textile Industry

Laminated Sheets • Laminated Yardage • Laminated Tubing
Tite-Fit Tubing • Paper Rug Covers • Burlap Piece Goods
Wire Ties and Tying Equipment

Bemis General Offices—St. Louis 2, Mo.

For more information, write direct or use Reader-Service post card.

Round-Knife Cutter

A cloth-cutting machine that uses a round knife to cut stacked fabric has been announced by Eastman Machine Co., 779 Washington St., Buffalo 3, N. Y.

Recent improvements include (1) permanent motor lubrication, (2) enclosures around gears, and (3) an automatic starter. The improvements keep lint out of the mechanism. The cutter is available in several sizes and gear ratios.

Circle T-23 on Reader-Service Card

Rider-Type Power Sweeper

A compact 28-in. rider-type power sweeper for mill aisles and warehouses has been developed by G. H. Tennant Co., 2586 N. Second St., Minneapolis 11, Minn. The sweeper, Model 50, is 60 ins. long, without a side brush, and turns in approximately its own length.

The sweeper travels at 2 to 8 mph. and cleans a 28-in. path; with an op-

CONTINUED ON PAGE 212

Colorful

COTTON PRINTS

...every day!

GDC pioneered the popularity of inexpensive cotton piece goods—by introducing the Rapidogens® to the printing industry in 1932. These stabilized azoic dyes have been constantly developed—and today are still unsurpassed in range and quality.

RAPIDOGENS assure bright, bold shades and good fastness—to meet the increasing demands for colorful, washable cottons.

Our latest developments include Rapidogen Black I, Rapidogen Black 3GN Powder and Solution, Rapidogen Black BF Solution and Rapidogen Violet BN Solution.

You can have confidence in our complete line of Rapidogens, backed by years of manufacturing experience and application techniques. We invite you to call upon our Technical Department for current information and assistance.

From Research to Reality...

gdc gaf

GENERAL DYESTUFF COMPANY

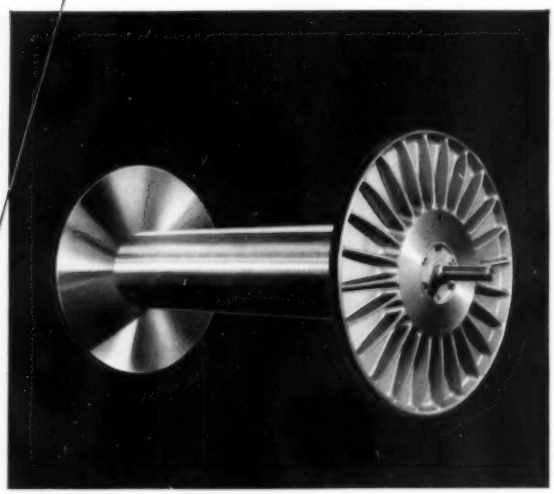
A SALES DIVISION OF

GENERAL ANILINE & FILM CORPORATION

435 HUDSON STREET • NEW YORK 14 • NEW YORK

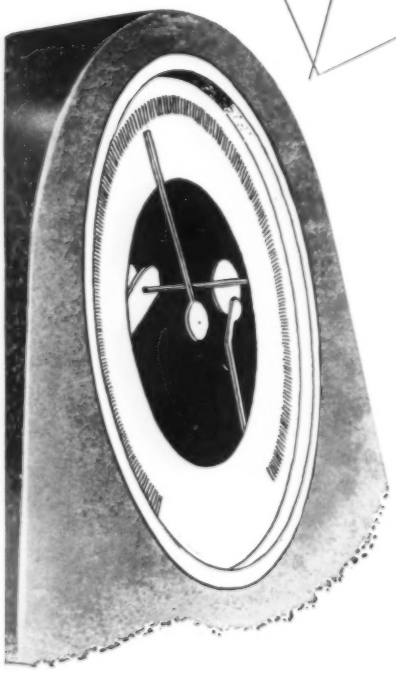
BOSTON • CHARLOTTE • CHATTANOOGA • CHICAGO • LOS ANGELES • NEW YORK • PHILADELPHIA • PORTLAND, ORE. • PROVIDENCE • SAN FRANCISCO • IN CANADA: CHEMICAL DEVELOPMENTS OF CANADA, LTD., MONTREAL

Beaming Nylon?



severe test

proves strength of new HAYES aluminum nylon beam



During load tests on a million-pound testing machine this Hayes Aluminum Nylon Beam withstood a load of 263,000 pounds without failure. With continued loading, the head casting cracked, — even then the beam still held a load of 80,000 pounds, which is considered sufficient for removal of nylon yarn without loss of material. There was no failure of the threads holding head to barrel. Thousands of these beams are now in use for beaming nylon.

The NEW beam is the only aluminum section beam being produced primarily for nylon and includes these features which make it of particular interest to the textile industry:

— available in 30″ and 32″ head diameters. 54¼″ traverse.
— heavy center hub construction, with 24 reinforcing ribs.
— ½″ minimum wall, high strength aluminum barrel.
—adaptable for use with all current makes of warpers.

This beam is merely another instance of Hayes long experience in the manufacture of light weight metal beams. Its greater head strength, increased rigidity, permanent running balance, and glass-smooth, rust-proof surfaces exist in all Hayes beams. Write today for complete information on Hayes beams.

HAYES INDUSTRIES, INC.
JACKSON, MICHIGAN

THE WORLD'S LARGEST PRODUCER OF LIGHT METAL BEAMS

Southern Representative:
R.E.L. Holt, Jr. & Assoc., Greensboro, N. C.

Eastern Representative:
J. Paul Laird, Philadelphia, Penn.

New England Representative:
J. S. Fallow & Co., New Bedford, Mass.

Canadian Representative:
J. S. Fallow & Co., Montreal, Canada

BANKED INSTRUMENTS that control temperature and dyeing cycle are located along the wall of the dyer's office. It's easy to keep a close check on every lot when all the dyehouse records are so close at hand.

Group Instruments for Better Control of Dyeing

• Locating all the controllers for 37 dyebecks in the dyer's office has worked out well at the Caromount plant of Sidney Blumenthal & Sons Co., Inc. The dyer can tell at a glance the situation in any beck in the mill, and the maintenance man has less to do.

By **ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD

When Sidney Blumenthal & Sons Co. laid out the dyebeck control system for its Caromount plant, it decided to put all the controller panels in the dyer's office.

The advantages of locating the controllers for 37 becks in a solid bank along the office wall are several.

From a processing standpoint, the dyer has instant reference to the temperature conditions in any beck at any time. He doesn't have to leave the office to check this important point; and after checking a patch, he can turn to the panel and make any temperature changes that become necessary during the dyeing cycle.

Another easily checked factor is the patching interval. With all the controllers close by, the dyer can keep accurate watch on the dyeing time and see to it that patches are taken when necessary.

Centralized location in a room apart from the dyehouse itself also helps the maintenance man in two ways. First, he's able to work on the instruments in comparative comfort in a traffic-free area. Second, by locating the instruments away from extreme humidity, vibration, and the possibility of damage from trucks or careless operators, maintenance has been cut down considerably.

STEEL FOR THE TEXTILE FIELD

• STAINLESS STEELS
• CARBON STEEL BARS AND SHAPES
• PLATES AND SHEETS
• COLD-FINISHED SHAFTING
• STRUCTURALS

DIRECT FROM WAREHOUSE TO YOU

One of the South's largest and most complete varieties of steel warehouse products is your assurance of immediate shipment. Whether your order is for one piece or a carload, it will get the same rapid handling—24- to 48-hour delivery throughout the South. Next time call Atlantic for Steel and see what service *really* means.

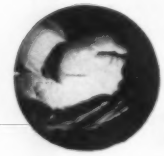
FREE!
COMPLETE HANDBOOK

Latest stock and weight handbook.

Call or write for your free copy.

WAREHOUSE DIVISION
Atlantic Steel Company
575 14th St. N.W., Atlanta 1, Georgia, TRinity 5 3451

Ask these questions, too, when you judge a fluorescent lamp...



Is it made with Halo Phosphor?

No other phosphors in use today can match Halo Phosphors for maintaining high light output and original color. Westinghouse (and only Westinghouse) uses Halo Phosphors throughout its entire fluorescent lamp line.

Are its electrodes built for longest lamp-life?

Constant development of new and better ways to make fluorescent lamp electrodes has enabled Westinghouse to *triple* the life of its fluorescent lamps since 1948.

Is it easy to seat securely?

Westinghouse fluorescent lamps are built with "guide bumps" on the end-caps. Easily felt with the fingers during lamp installation, they tell at a touch when the lamp has been securely seated in its sockets.

For the full story on how to get more for your money in fluorescent light, contact your Westinghouse Lamp representative. You can be sure . . . if it's Westinghouse.

WATCH WESTINGHOUSE

*WHERE **BIG** THINGS ARE HAPPENING FOR **YOU***

MILL MAINTENANCE

Preventive Maintenance of Buildings

The maintenance of a textile mill building is a big, never-ending chore. The heavy machinery and its constant vibration literally shake such a building loose at the seams. Leaks in the roof, holes in the floor, broken window panes, leaking pipes, sagging sills, and countless other things are always demanding the attention of the maintenance crew.

Often maintenance chores are neglected or postponed until drastic action must be taken. For instance, a supervisor reports a crack in the wall. The repair job is put off until the week-end shutdown. When the week-end rolls around, there may be an air compressor that needs the services of the maintenance crew or some other emergency job of installation or repair pops up.

The cracked wall is forgotten because the supervisor thought his responsibility ended when he made a report. He turns his attention to other matters with the thought that the wall will be fixed when the maintenance crew gets around to it.

In the meantime, the crack in the now weakened wall is spreading and splitting. Suddenly, a number of the loosened bricks are dislodged and it is just a matter of luck that a brick doesn't fall on someone's head. But whether or not a personal injury occurs, the matter of the cracked wall is again brought to the attention of all concerned and the delayed repairs usually follow.

Develop a System

Emergency repairs occur daily in mills that do not have a businesslike system of plant maintenance. Many mills operate under a system of doing only the repairs that are absolutely necessary. In other words, no repairs are made until there is an actual threat to continued production.

Preventive maintenance can be practiced on the mill buildings just as efficiently as it is on the machinery. A carefully worked out system of inspection and repairs must be evolved. Reliable men must be entrusted with the prosecution of the maintenance program. It is altogether too easy for a lazy employee to cover up a defective and dangerous spot with a coat of paint or a piece of wallboard. Many maintenance men would rather do makeshift patching every day than to take longer to do the job and make a permanent repair.

Careful periodic inspection is necessary for successful plant building maintenance. In checking the windows, merely looking for cracked or broken panes is not enough. The inspector should look for loose or cracked putty, for warped sash or frames, for rust or peeling paint around the windows, for anything that might later cause damage to the windows; and then he should follow up the inspection with positive action.

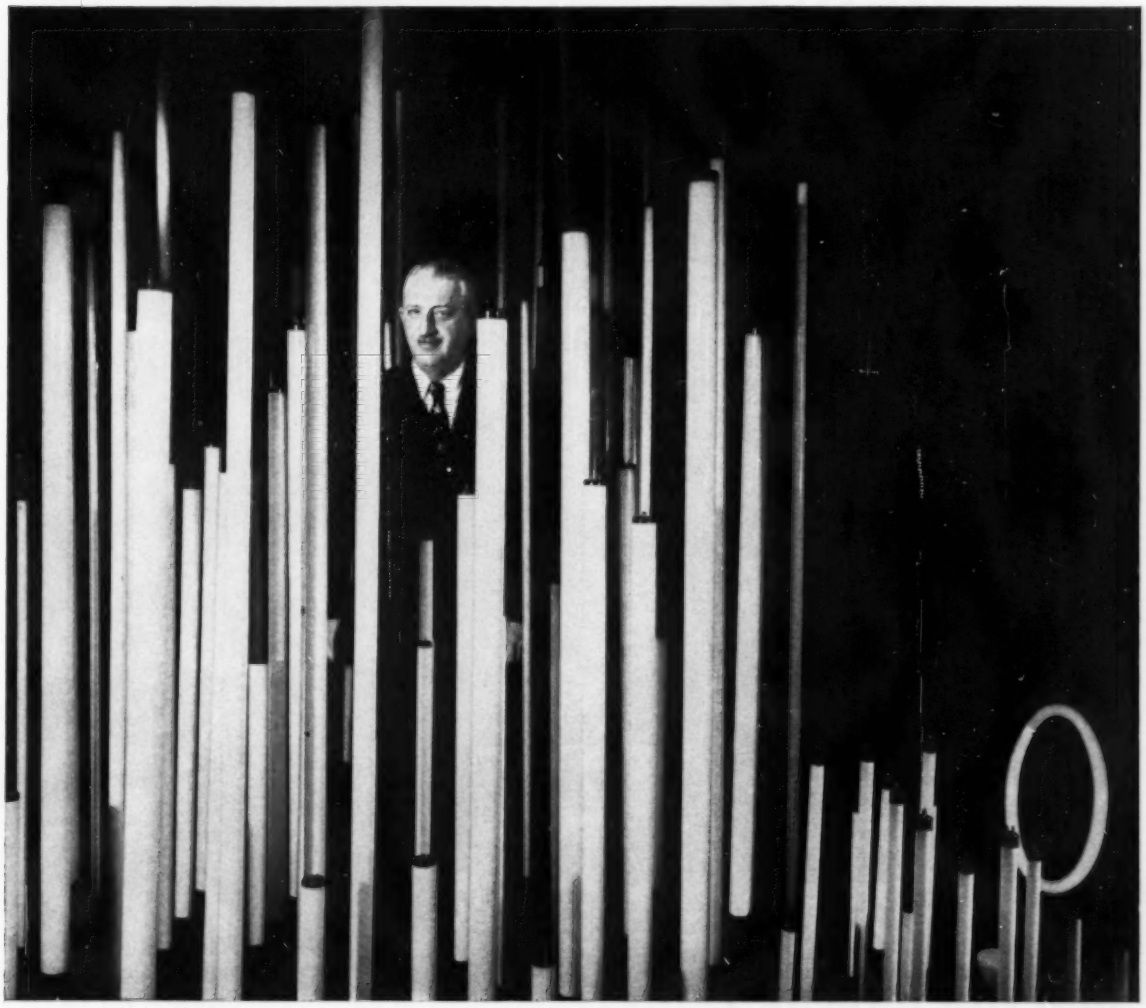
Always Follow Through

Inspection of all parts of the mill buildings should follow a set pattern. Matters needing repair at once—things that if repaired now will save much bigger repairs later—and anything that will cause damage are the important items to look for. Also, remember that no system of inspection is worth the time required to do it without adequate follow-up.

It is good practice to have someone from the shop or from another department of the mill make occasional inspections of each department. Too often, some defect in the building will develop gradually and the supervisor and workers become blind to it by close association. Many times, a sagging floor, a crack in the wall, peeling paint, and other items needing attention are overlooked by those in the department but are instantly noticed by an outsider.

A system of plant inspection executed by the maintenance crew should not relieve the production supervisors of their responsibilities in this respect. The supervisor is near his job at all

how to judge a fluorescent lamp . . . point no. 4



ask about **FULL SELECTION**

Smartest move you can make when you buy fluorescent lamps is to see to it that you get precisely the right type, size and color for the lighting job to be done. In the Westinghouse fluorescent family of 290 different lamps—including Slimline and Rapid Start—there's a type and size precisely right for every office, plant and merchandising application. And the full Westinghouse color range includes seven different shades of "white" alone.
You can be sure . . . if it's Westinghouse.

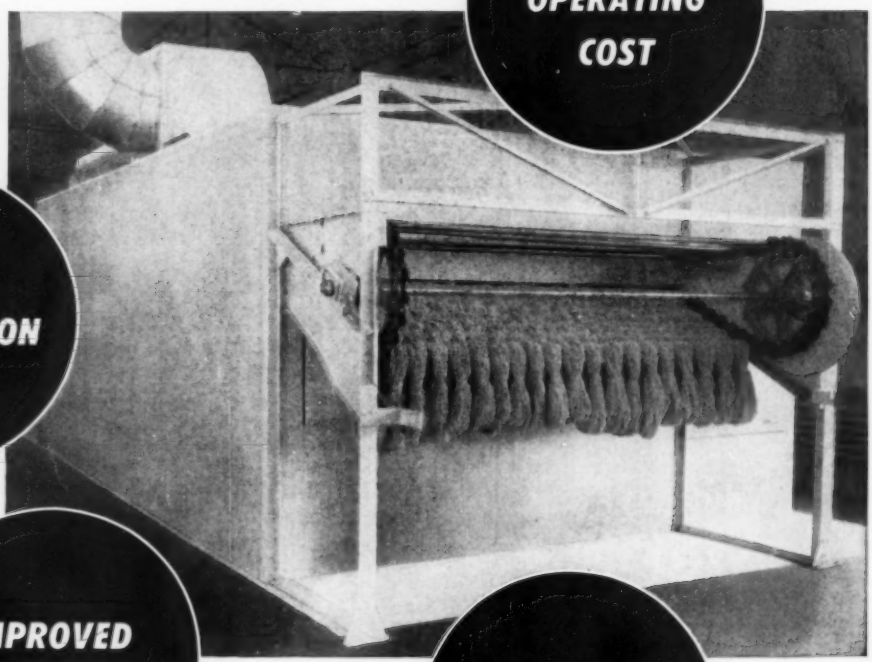
WATCH WESTINGHOUSE
*WHERE **BIG** THINGS ARE HAPPENING FOR **YOU***

 For more information, write direct or use Reader-Service post card.

Put a PROFIT in your yarn drying!

LOW OPERATING COST

EASIER INSTALLATION



IMPROVED HOUSING

RAPID DRYING

Proctor Automatic Skein Yarn Dryer with Two-Way air circulation, drying dyed carpet yarn.

PROCTOR DRYERS for skein yarn

Regardless of your output, there is a Proctor Yarn Dryer with the right capacity to make your drying profitable. Truck Dryers for skeins and cakes, or Automatic Dryers for continuous operation, both feature controlled air circulation to provide the *greatest drying uniformity obtainable*. Cotton, wool, silk, or synthetics can be dried at fastest possible rates—show substantial savings in time, labor, and steam requirements. And, as with all Proctor equipment, you can depend on performance guaranteed in terms of the finished product produced. Investigate these profit opportunities now—write today for latest information bulletins.

WRITE FOR DETAILS. PROCTOR & SCHWARTZ EQUIPMENT FOR THE TEXTILE FIELD

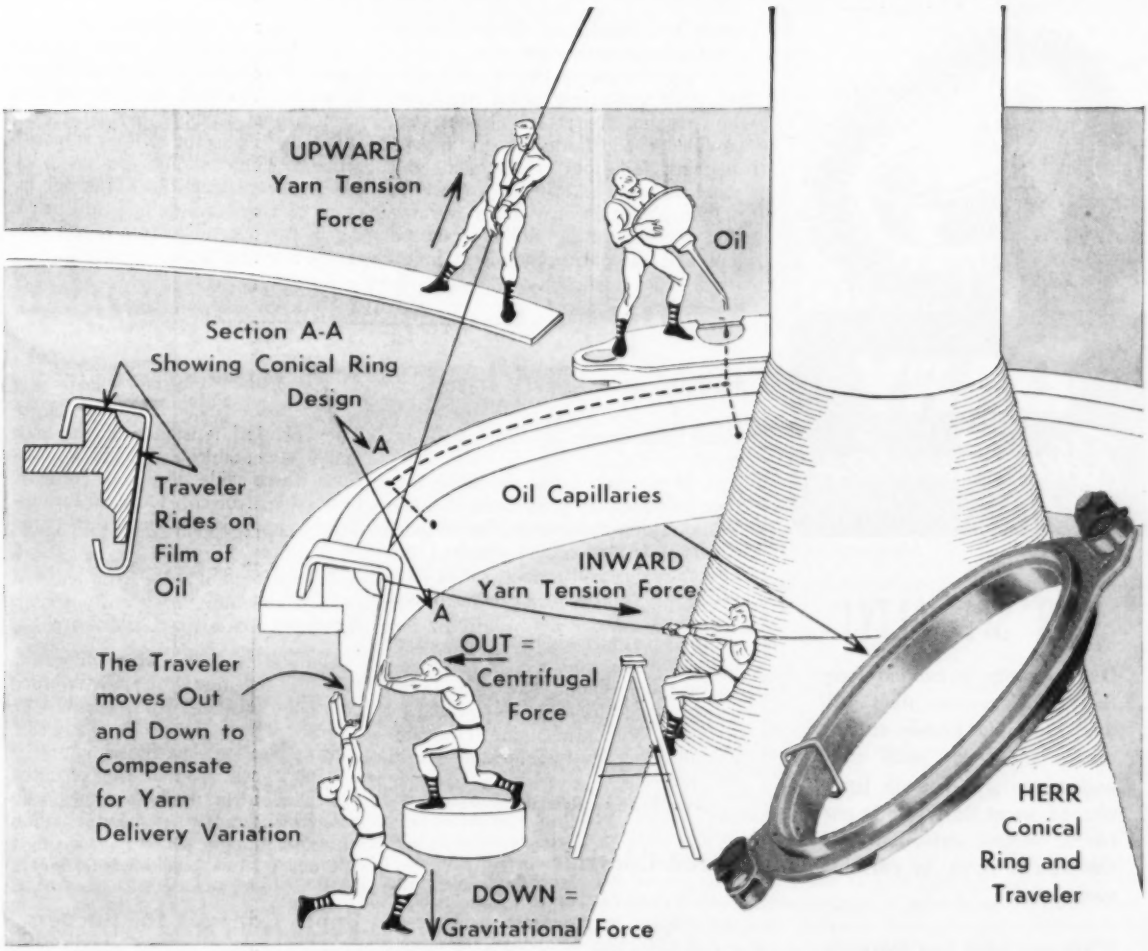
AUTOMATIC BLENDING SYSTEMS • WEIGHING FEEDS • PICKERS • SHREDDERS • BALE BREAKERS • SYNTHETIC CARDS • GARNETTS • DRYERS FOR FIBROUS MATERIAL • YARN DRYERS • HOT AIR SLASHER DRYERS • CLOTH CARBONIZERS • ROLLER DRYERS AND CURERS • LOOP AGERS FOR PRINT GOODS • TENTER HOUSINGS • OPEN-WIDTH BLEACH SYSTEMS FOR WOVEN FABRICS • MULTIPASS AIRLAY DRYERS • NYLON SETTING EQUIPMENT • CON-O-MATIC WASHERS • CONTINUOUS BLEACH SYSTEMS FOR PRODUCING TUBULAR KNITS • EQUIPMENT FOR "REDMANIZED"® SHRUNK-TO-FIT FABRICS • CARPET DRYERS

Proctor

PROCTOR & SCHWARTZ, Inc.

Manufacturers of Textile Machinery and Industrial Drying Equipment
Philadelphia 20, Pennsylvania

For more information, write direct or use Reader-Service post card.



HERR Conical Ring Design forces the traveler out and down, equalizing the yarn tension!

RESULTS

- Yarn breakage is prevented
- Yarn is smoother
- Heavier More Uniform Doffs
- Minimizes Wear on Ring and Traveler

Ask for help on your problem.

The Herr Conical Ring Design equalizes the yarn tension forces (upward and inward) and the Traveler centrifugal and gravitational forces (outward and downward). These opposing forces are balanced and the traveler rides on the ring with minimum frictional contact.

Reservoirs feed oil to the capillary openings. The Traveler distributes this oil to form a microscopic film on which it rides permitting maximum spindle speed with minimum Ring and Traveler wear.

If you spin or twist confer with Herr.

Please send technical literature on
Conical Rings ☐ *Herr Flyers* ☐

NAME ..... TITLE .....

COMPANY .....

ADDRESS .....

CITY ..... STATE .....

HERR

MANUFACTURING CO., INC.

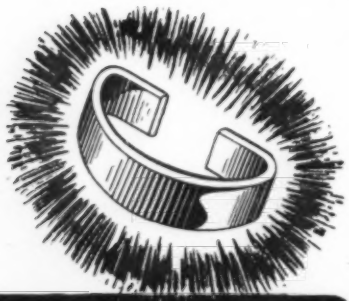
309 FRANKLIN STREET, BUFFALO 2, NEW YORK

 For more information, write direct or use Reader-Service post card.

times and should see things that an outside inspector would miss.

It may be only a slight settling of the floor under one of his machines. This sagging floor may not cause any trouble at all; it may result in the machine being out of alignment and cause seconds or loss of production; or the condition may be a warning that the supporting sill is weakened and that the entire floor is in imminent danger of falling through.

For best results in plant maintenance, a well-defined program should be worked out and adequate training given so that all employees concerned will know the extent of their responsibilities. There should be no buck passing or playing down the importance of a well-maintained mill building in the over-all picture of efficient textile manufacturing.



DARY
Ring Travelers

OUR SPECIALTY!

Our specialty is making Dary ring travelers — an item well and favorably known to the textile trade for more than half a century. Though times change, we at Dary hold to one course without deviation. We continue to serve, by pursuing our specialty.

When you need ring travelers, call on our experience to aid your choice. Consult your friendly Dary representative!

Always specify
DARY Ring Travelers

THE DARY RING TRAVELER CO.
TAUNTON, MASSACHUSETTS
LINDSEY I. PHILLIPS, TREASURER, TAUNTON, MASS.
JOHN H. O'NEILL, BOX 720, ATLANTA, GA.
JAMES H. CARVER, BOX 22, RUTHERFORDTON, N. C.
CRAWFORD "JACK" RHYMER, BOX 2261, GREENVILLE, S.C.

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 204

tional side brush, it cleans a 40-in. path.

A 28-in. main brush, revolving in a vacuum-equipped compartment, hurls waste into a removable dirt hopper. At the same time, a high-volume 11-in. fan draws dust, lint, and fine dirt from the brush compartment into a fabric bag.

The unit operates much like a car. Clutch, brake, and accelerator pedals are operated by foot. The machine has a front-wheel drive and is powered by a 6.8-hp. Wisconsin engine. The transmission provides two forward speeds and reverse.

Circle T-24 on Reader-Service Card

Speed Controls

Complete 1- and 1½-hp. Variac motor-speed controls are available at a cost reduction of about 25% under earlier models from General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass. A small, rugged drum controller is used in place of magnetic contactors as the switching unit for forward, reverse, and stop operations.

Circle T-25 on Reader-Service Card

Miniature Differentials

Miniature differentials for applications where small size and long life are essential have been announced by Metron Instrument Co., 432 Lincoln St., Denver 3, Colo. These units combine two rotating inputs to give speed sums or differences and angular sums or differences.

Circle T-26 on Reader-Service Card

Plastic Pipe

Polyvinyl chloride is the chemical used in manufacturing a line of pipe offered by National Tube Div., United States Steel Corp., 30 Rockefeller Plaza, New York, N. Y. The rigid pipe is supplied in normal- and high-impact types in sizes from ½ to 6 ins. The chemical resistance of the pipe makes it suitable for many applications where acids, alkalis, or corrosive fumes are involved. Outdoor installations are practical, even in direct sunlight.

Circle T-27 on Reader-Service Card

Predetermining Counters

Counters that can stop the operation of a machine at a predetermined count are available from Presin Co., 802 N. Fairfax Ave., Los Angeles, Calif. The predetermined count is set by wheels. When the predetermined count is reached, a switch is thrown that can be used for actuation or stop action.

Circle T-28 on Reader-Service Card

Panel Controls for Burners

Fireye AC panel-control systems for automatic burners have been announced by Combustion Control Div., Electronics Corp. of America, 718 Beacon St., Boston, Mass. The systems are said to offer complete burner protection and fully automatic operation for oil, gas, and combination oil-gas burners.

Circle T-29 on Reader-Service Card

Revolving Joint

An improved revolving joint applicable to textile rolls that must be heated or cooled has been developed by Rotherm Engineering Co., 7280 W. Devon Ave., Chicago, Ill. Designed to separate incoming cool water from heated condensate, the joint permits more-rapid cooling. The insulating space between lines can also be converted to preheating purposes. The joint is made in all sizes from 1 in. up.

Circle T-30 on Reader-Service Card

Submersible Booster Pump

Vertical pumps designed to be completely submerged in wells or tanks

Does chelation actually represent a new kind of chemistry? Are the possibilities as exciting as many seem to think? This series endeavors to answer these—and many other—pertinent questions on this fascinating subject. It is hoped chemists, engineers and purchasing agents alike will find these answers helpful. Now on to . . .

DOW

The Chemistry of Chelation: Part II

Versene and Versenol Series · Descriptions and Uses
A measure of Value · A Suggestion

To review in capsule form: Part I introduced chelation, offered examples of typical chemical reactions, applications, and discussed future possibilities. You will remember that a chelating agent is defined as a chemical which surrounds metallic ions with a multiple-ring structure that keeps the metal chemically inactive and holds it in solution. The applications in industry are many—and new ones are being found almost daily. That, of course, brings us to another consideration: different chelating agents for different uses.

VERSENE® AND VERSENOL®

Chelating agents are commercially available from Dow as 15 different products—all based on aminocarboxylic acid derivatives. Among these, wide spectrum performance is shown by two series of products. The Versene series of products (Versene® 67, Versene 100, Versene Powder, Versene Beads, Versene 9 and Versene Acid) is based on EDTA* and the sodium salts of this material. The Versenol series (Versenol® 120, Versenol Powder and Versenol Beads) consists of various physical forms of Na_3 HEDTA**. The Versene series, except for Fe+++ in the alkaline pH range, is generally the stronger series of the two (more completely chelates the last traces of metal). The Versenol series is notably stronger for Fe+++ in the mildly alkaline pH range and is usually cheaper on a performance basis if the consumer can tolerate the weaker chelate structure. Versene is the strongest, most stable commercially available chelating agent. It is the one with the greatest number of successful applications.

DESCRIPTIONS AND USES

Here are three Dow chelating agents together with their descriptions and uses:

Versene 100 is a concentrated aqueous solution of a technical grade of the tetrasodium salt of EDTA . . . widely used in textile processing, detergent formulations and metal cleaning.

Versene Acid is a dry form of EDTA technical. It is used in many operations as a raw material for the preparation of various derivatives, such as metal chelates, salts (K, NH_4), esters and many others.

*Ethylenediaminetetra acetic acid

**Trisodium salt of N-hydroxyethylethylenediaminetriacetic acid

Versenol 120 is a concentrated aqueous solution of a technical grade of Na_3 HEDTA. It is also very valuable to detergent, textile and metal-cleaning processes.

Naturally these three specific agents are not the answer to *every* problem. That's the reason for the many other Versene products, to be discussed in Part III.

A MEASURE OF VALUE

A measure of the broad performance capacity of a chelating agent can be obtained from its *chelation value*—determined on a reference metal. Calcium is used as the reference metal under the standard test proceedure accepted by the industry. Dow prefers this "performance basis". It specifies more clearly what chelating agents *actually accomplish* than such terms as "% solids" and "% active". Consequently, the "100" in Versene 100 means that one gram of this product will chelate 100 milligrams of calcium carbonate in accordance with the standard test procedure. By the same token, one gram of Versene 67 will chelate 67 milligrams, and so on.

A SUGGESTION

Two closing thoughts: Dow wants to help in any way possible to further develop the applications for chelation. Also important, Dow would like to hear from *you*—your thoughts, reactions, suggestions. Please inquire about any problems or ideas you may have. Information or actual technical assistance will be forthcoming promptly. Write, on your company letterhead, to Technical Service and Development, Dept. SC 912K, THE DOW CHEMICAL COMPANY, Midland, Michigan.

THE NEXT TWO TOPICS IN THIS SERIES

PART III
July
August
September

Specific chelating agents for specific applications (agent for iron control depends on pH—Versene Fe-3 Specific® for iron and transition metals on the alkaline side, Versene T® for iron in presence of free caustic—other solutions to special problems).

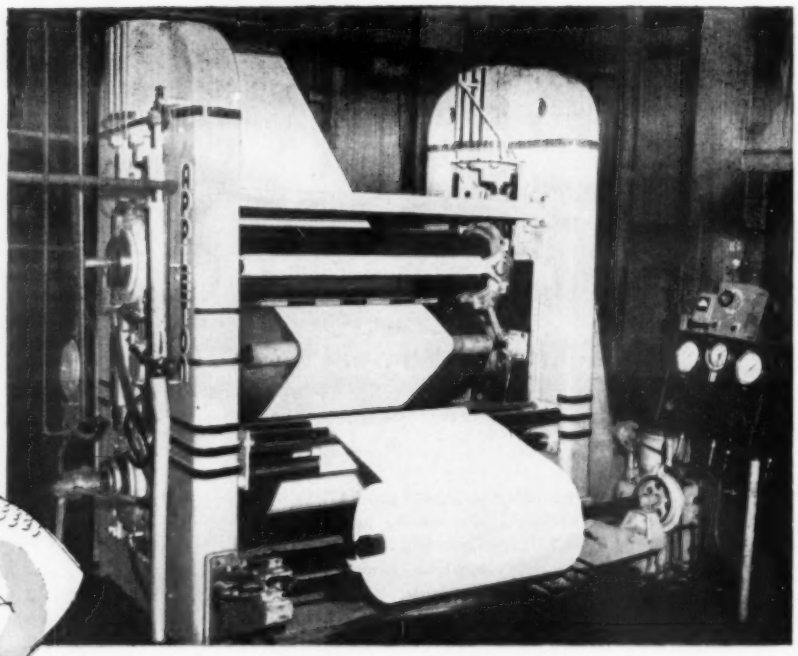
PART IV
October

Applications in specific industries (formulation of alkaline cleansers—stabilization of hydrogen peroxide and Kier boiling in textile processing—uniform control of trace metal catalysts in polymerization of synthetic rubber—other industrial applications).

you can depend on DOW CHEMICALS

DOW

Choose your Champion

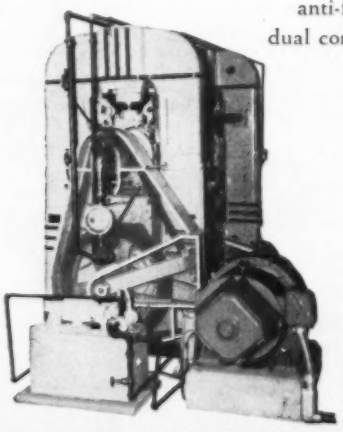


Here is an 80 Ton Appleton 3 Roll Calender in operation

...in Any weight division

The Appleton 3 Roll Hydraulic Friction Calender —available in 40 to 120 Ton models—takes difficult jobs in easy stride, performs dependably day after day, combines speed with consistent quality. Illustrated is the 80 Ton model. Its specialty— Everglaze Glazed finishes.

Long life features include all rolls mounted in anti-friction bearings with force feed oil lubrication . . . dual control pressure system . . . cooling cylinder . . . 40 h.p. Reliance V.S. drive.



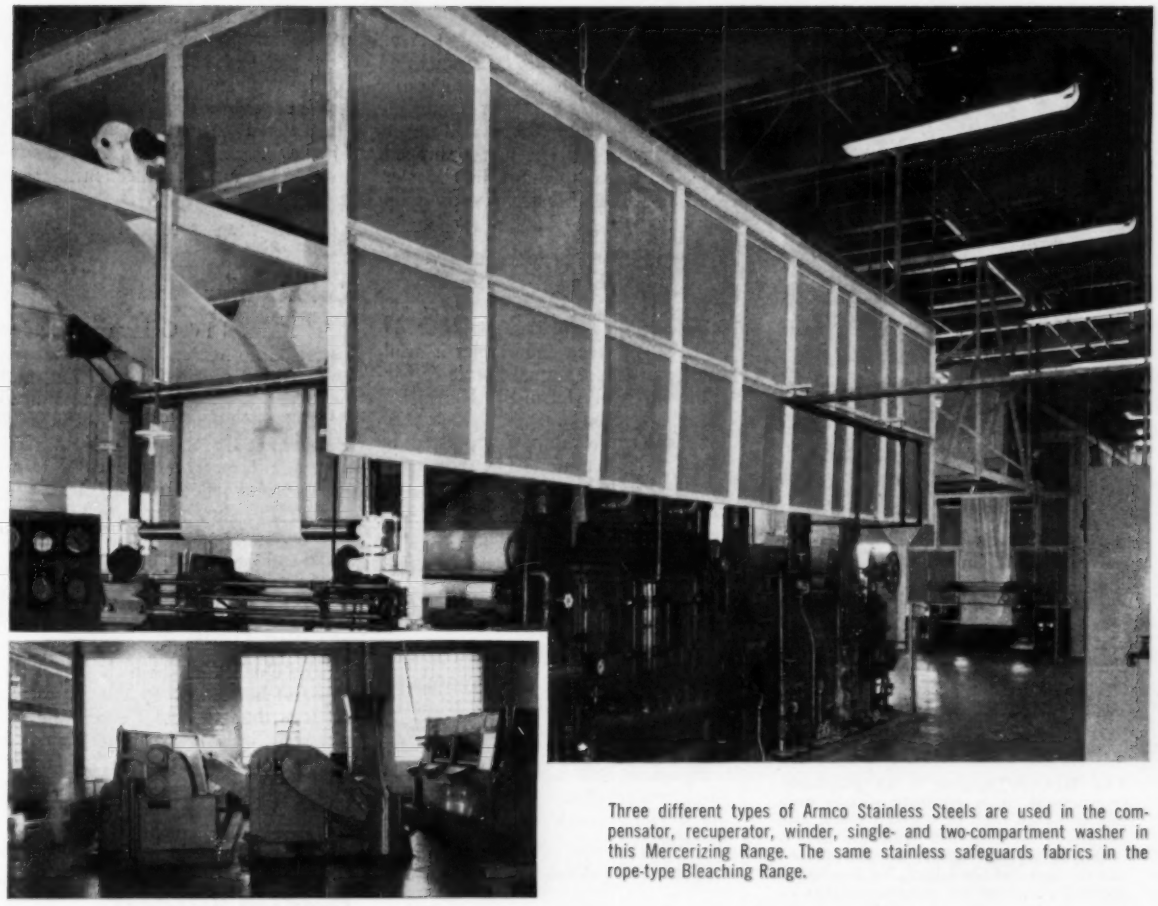
A good decision:

call our representative today and see how modern Appleton equipment can help cut your costs. There is no obligation.

APPLETON MACHINE COMPANY

APPLETON WISCONSIN

CUSTOM-BUILDERS OF TEXTILE CALENDERS • CALENDER ROLLS OF ALL KINDS



Three different types of Armco Stainless Steels are used in the compensator, recuperator, winder, single- and two-compartment washer in this Mercerizing Range. The same stainless safeguards fabrics in the rope-type Bleaching Range.

3 Armco Stainless Steel Grades Safeguard Fabrics in Southern Mill

Three grades of Armco Stainless—Types 302, 304, and 316—safeguard fabrics when they're processed through this bleaching and finishing equipment in a southern textile mill.

In most textile processing, Armco Stainless Steels can help cut production costs and improve your products. Here's how:

- **cleaning expense drops**
- **maintenance costs go down**
- **rust spots are eliminated**
- **no boil-outs needed**
- **colors stay true**
- **service life is increased**
- **its smooth surface guards against snagging**

Many Grades

For every piece of equipment in a textile mill, there's *one* Armco Stainless grade that's best. In agers, kiers, and dye kettles, for example, where corrosion can be severe, there are the special Armco ELC grades, 304L and 316L. The extra low carbon content of these grades protects against the danger of corrosion near welds.

Keep these advantages in mind when you consult with your equipment manufacturer. If you'd like to know the names of leading textile equipment suppliers who use Armco Stainless Steels, just write us at the address below. We'll put you in touch with them.

ARMCO STEEL CORPORATION

1456 CURTIS STREET, MIDDLETOWN, OHIO

ARMCO®

SHEFFIELD STEEL DIVISION • ARMCO DRAINAGE & METAL PRODUCTS, INC. • THE ARMCO INTERNATIONAL CORPORATION

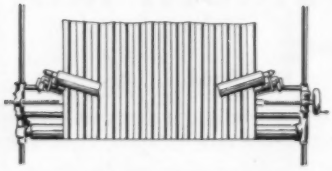
***WORLD-FAMOUS* GUIDER . . . the sextant has dependably led mariners to their destination . . . for centuries.**

***WORLD-FAMOUS*, too . . . in textile plants everywhere is the ever-dependable**

MECHO AIR GUIDER

***Famous for* INCREASING PROFITS, BOOSTING CLOTH PRODUCTION, REDUCING HANDLING COSTS, DAMAGE and LOSS.**

The MECHO Guider is so precision-engineered, it is accurate within one-eighth of an inch of a given mark and ranges from 1 to 400 ypm. Its hypersensitive selvage finger is guaranteed not to turn double edges. An ingenious control . . . without counterweights or linkages . . . infinitely adjusts selvage finger tension, while in operation, to suit the particular weight and weave of fabric. Stainless steel, acid- and moisture-resistant units with sealed bearings are also available.



MECHO Guiders have been standard equipment in hundreds of finishing plants for more than 20 years, handling woven and non-woven fabrics, semi-rigid plastics, artificial leather and rubber, felt and gauze. *What greater testimony to product performance can one ask?* Isn't that the kind of product you want in your plant?

PHONE, WIRE or WRITE TODAY for a MECHO complete Guiding Service catalog; it's free.

GUIDER **SPECIALTY COMPANY**
427 W. Rock Ave.,
New Haven 15, Conn.

have been announced by Lane & Bowler Pump Co., 2943 Vail Ave., Los Angeles 22, Cal. Manufactured in 5- to 150-hp. sizes with capacities of 100 to 4,000 gals. per min., the pumps are factory-assembled units ready for installation when shipped. They are suited to sump, line-booster, fire control, and barrel-pumping operations.

Circle T-31 on Reader-Service Card

End Stapler

An air-powered end stapler is available from International Staple & Machine Co., 801 Herrin St., Herrin, Ill. The high-speed unit, which has no electrical connections, is operated by a two-cycle air motor. The stapler was designed for closing end-opening, full-overlap, partial-overlap, telescoping, and many other types of cartons.

Circle T-32 on Reader-Service Card

Solder-End Valves

Five bronze solder-end valves have been announced by Lunkenheimer Co., Cincinnati, Ohio. The line includes three gate valves: rising stem with double-wedge disk or solid-wedge disk, and nonrising stem with single-wedge disk. The other valves are a swing check valve and a nonmetallic-disk globe valve.

Circle T-33 on Reader-Service Card

Temperature Controllers

The L4008 and L6008 Ambi-Stat temperature controllers announced by Minneapolis-Honeywell Regulator Co., Wayne & Windrim Avenues, Philadelphia 44, Pa., use a remote bulb sensing element to rapidly detect and correct for temperature changes. The bulbs can be inserted horizontally or vertically in pipes, tanks, or other vessels.

Circle T-34 on Reader-Service Card

Space Deodorizer

Offensive odors produced in various manufacturing operations can be destroyed by a product manufactured by Aireactor Corp., 22 E. 40th St., New York 16, N. Y. The deodorizer is a clear nonflammable material that is sprayed into affected areas by special equipment.

Circle T-35 on Reader-Service Card

Corrosion-Resistant Pumps

Plastic liners permit handling of corrosive liquids in a series of pumps available from Vanton Pump & Equipment Corp., Div. of Cooper Alloy Corp., 201 Sweetland Ave., Hillside, N. J. Produced in 10-, 15-, and 20-gals.-per-min. sizes, the pumps are constructed so that pumped liquid touches nothing but the corrosion-resistant liner. No mechanical seals are needed.

Circle T-36 on Reader-Service Card

Colorimeter

The Model IV Colormaster Differential Colorimeter, which measures color with a sensitivity exceeding that of the human eye, has been announced by Manufacturers Engineering & Equipment Corp., Hatboro, Pa. The instrument measures the color transmission and reflectance of fibers, pigments, and slurries within 0.0001 reflectance unit.

Circle T-37 on Reader-Service Card

Double-Head Stapler

The Dual Stapler, which staples the top and bottom of an average carton in less than 3 secs., has been announced by International Staple & Machine Co., 801 Herrin St., Herrin, Ill. Accurate penetration control prevents damage to the contents.

Circle T-38 on Reader-Service Card

Overload Protector

The Tork-O-Stat, a slip-clutch overload protector that safeguards machines from damage caused by overloading and jamming, has been announced by Machine Accessories, 6 E. Franklin Ave., Minneapolis, Minn. The self-contained unit is easily installed between a driven and driving mechanism.

Circle T-39 on Reader-Service Card

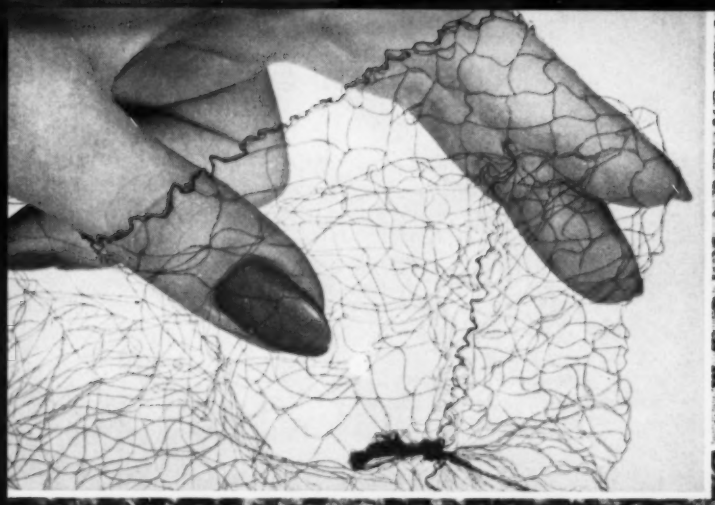
Automatic Glue Applicator

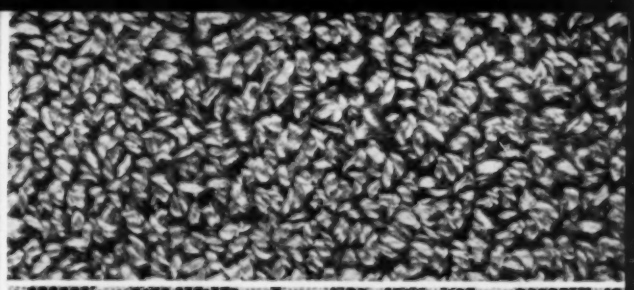
An automatic glue applicator with electromagnetic controls is available from Saranac Machine Co., Benton Harbor, Mich. Featuring a new type of rotary valve, the unit automatically meters and applies glue in controlled thin strips onto parts or materials that pass beneath it on a conveyor.

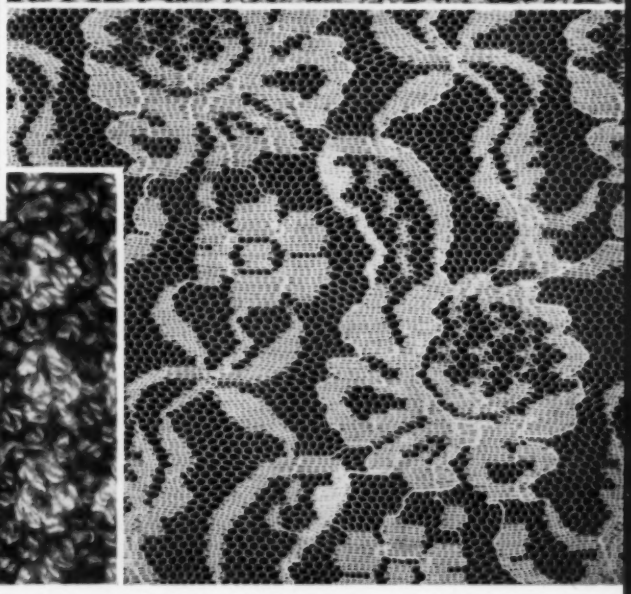
Circle T-40 on Reader-Service Card

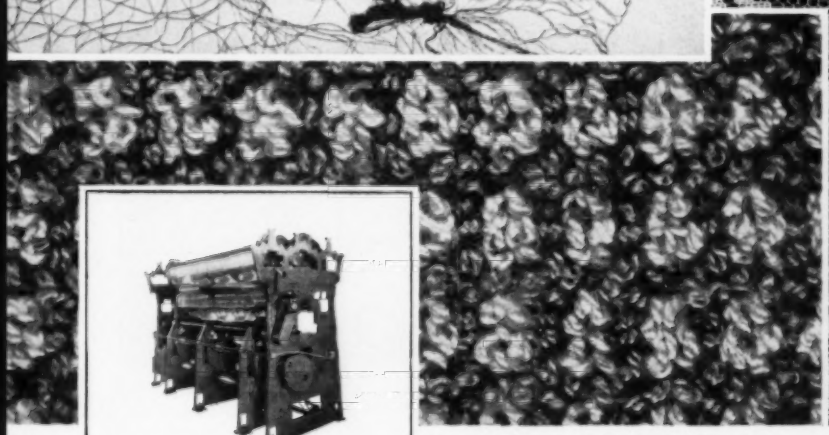
Spray Gun

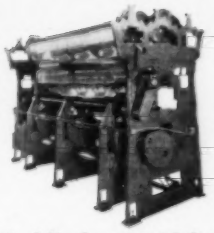
A spray gun for paint, oils, insecticides, or any material that can be applied by spraying is available from











World's fastest 10-bar Raschel knitter

—from hairnets to heavy carpet

ALL KNITTED ON THE KIDDE KNITTER

Why is the Kidde Knitter the most widely used Raschel type machine in the world? The answer is exceptional versatility coupled with outstanding speed and reliability.

The range of gauges of the Kidde Knitter will produce anything from the sheerest tulle to heavy carpet — all with equal dependability. And special attachments make it even more versatile:

- A sinker bar produces tighter stitches . . . eliminates selvage troubles.
- A power let-off attachment for controlling rubber beams improves quality of elastic fabrics.
- A power yarn feed assures uniform quality at high speeds and permits the use of large warps.

These are just a few of the advantages that account for the popularity of the Kidde Knitter, both with the knitter who specializes in one type fabric and the knitter who depends on flexibility to meet the requirements of his trade. If you specialize in any one of the following fabrics . . . elastic fabrics, tulle and various types of net, lace and lace edgings, shoe cloth, laundry nets, sport shirtings or carpeting . . . or if you need versatility encompassing many of these types . . . the Kidde Raschel Type Knitter can give you faster, more economical, more dependable production.

SEND FOR FABRIC SAMPLES

We will gladly send you swatches of fabric and complete information on the range, speed and quality of production possible on the Kidde Knitter. Write today for details. Dept. KA1

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS
BEAMERS • CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS

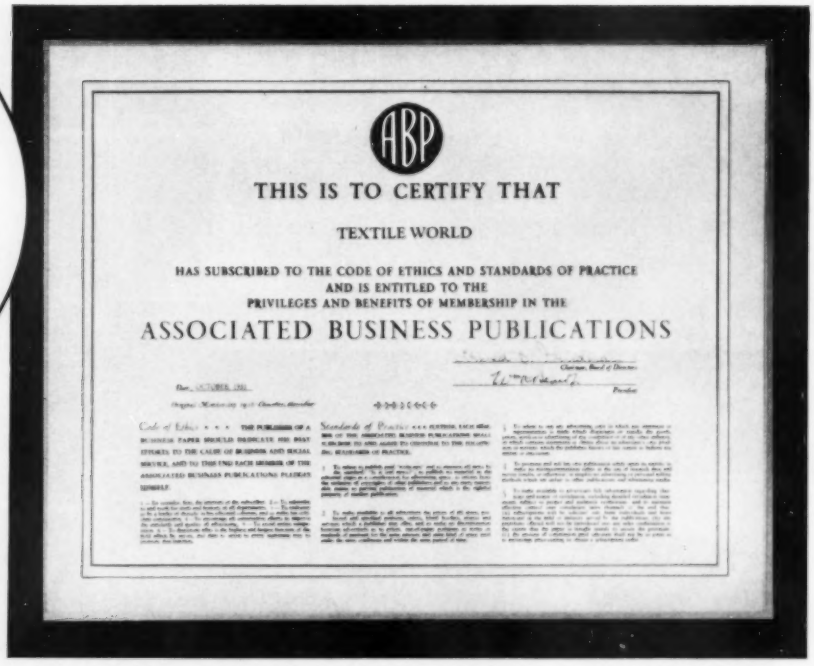
Kidde

MANUFACTURING CO., INC. — 42 FARRAND STREET — BLOOMFIELD, NEW JERSEY

SOUTHERN OFFICE — 267 W. MAIN ST., GASTONIA, N. C.

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

"TO CONSIDER **FIRST** THE INTERESTS OF THE SUBSCRIBER"



THIS IS TO CERTIFY THAT

TEXTILE WORLD

HAS SUBSCRIBED TO THE CODE OF ETHICS AND STANDARDS OF PRACTICE
AND IS ENTITLED TO THE
PRIVILEGES AND BENEFITS OF MEMBERSHIP IN THE

ASSOCIATED BUSINESS PUBLICATIONS

TEXTILE WORLD is an active member of the Associated Business Publications which this year is celebrating its Golden Anniversary. We take this opportunity proudly to re-affirm our belief in the high publishing principles for which the Association stands and to assure our readers that we will ever "consider, *first*, the interests of the subscriber."

THIS WE BELIEVE...

(THE ABP CODE OF ETHICS)

The publisher of a businesspaper should dedicate his best efforts to the cause of business and social service, and to this end each member of the Associated Business Publications pledges himself:

1. To consider, first, the interests of the subscriber.
2. To subscribe to and work for truth and honesty in all departments.
3. To endeavor to be a leader of thought in his editorial columns, and to make his criticisms constructive.
4. To encourage all constructive efforts to improve the standards and quality of advertising.
5. To avoid unfair competition.
6. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

AUDITED PAID CIRCULATION ABC

BUSINESS PAPER LEADERSHIP ABP

Textile World

Some Plain Facts About Drawing Equipment

The value of drawing equipment is based on three things—production per unit, sliver quality, and operating cost. We claim, and can prove, that Ideal High Speed Ball Bearing Drawing* excels in all three.

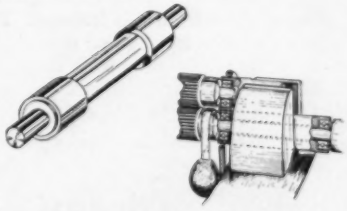
Production

This depends on consistent operating speed. Ideal Drawing will run smoothly and safely at speeds in excess of 450 feet per minute. The exclusive features which make this possible are as superior to ordinary drawing—old or new—as a jet engine is to the propellor type.

A Typical Ideal Installation

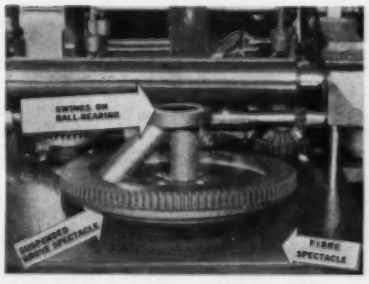
Sliver Quality

Ideal's new principle automatically evens out thick and thin places in the roving, and prevents bruising or cutting of stock. Ideal's exclusive Flute construction imparts a permanent, strength increasing crimp to the stock. Hundreds of strength and evenness testers are daily recording the superiority of Ideal sliver.



Ideal Spacing Section

This is one of the several valuable features found only on Ideal Drawing. These patented ball bearing spacing sections carry *all* of the weight of the rolls . . . transmit *no* resistance . . . and hence never wear to throw the rolls out of alignment. They deliver Ideal Feather-touch Drafting, at high speeds, month after month . . . year after year . . . without requiring maintenance or adjustments.



Can be installed on your present frames or furnished on New Ideal Frames

Ideal Coiler Tube Mechanism

The Coiler Tube Mechanism shown below, swings freely *above* the spectacle at high speed. Requires no oil or grease and puts more sliver in each can.

Economy

It costs you less to equip your mill with Ideal Drawing. It costs less in operating labor. Work stoppages for cleaning or reconditioning are practically nil. And one 3 HP motor drives 16 deliveries. Ideal Drawing is billions of pounds beyond the experimental stage and is giving supreme satisfaction in hundreds of mills. We'll be glad to give you the names of nearby users. It will pay you to write for full information on Ideal before you buy.

* Patent Nos. 2,610,363; 2,490,544; 2,412,357. Other patents pending.

Ideal Industries, Inc.
Bessemer City, N. C.

TOP QUALITY!
FAST DELIVERY!

Now you can get genuine Diamond Fibre Roving Cans in the popular 15" size faster and better! Production has been increased to meet all demands for this size. Stocks are big enough for prompt delivery of these superior cans.

Diamond Fibre seamless cans are strong, tough, smooth, with a long work life. Interior has a porcelain-like surface which will not crack, chip, or soften. Choice of steel top rim, rolled fibre top rim for running synthetics, or reinforced turned fibre rim.

Get in touch with C-D-F's Textile Headquarters at 834 Hayne Street, Spartanburg, So. Carolina (call Spartanburg 3-6397). Write for new folder and Receptacles Catalog showing all C-D-F roving cans, trucks, boxes, loom parts.

CDF

CONTINENTAL DIAMOND FIBRE
CONTINENTAL-DIAMOND FIBRE DIVISION
OF THE BUDD COMPANY, INC.
NEWARK 55, DELAWARE

Sullivan-Becker Co., Kenosha, Wis. The gun operates from a standard CO_2 cartridge and requires no power or air-line connections but can be supplied with an attachment that will hook in to compressed-air lines if desired.

Circle T-41 on Reader-Service Card

Industrial-Liquids Pump

A pump that handles liquids containing high percentages of air or solids has been patented by Ingersoll-Rand, 11 Broadway, New York 4, N. Y. A diverging impeller that provides greater area at the discharge area than at the inlet area is featured. The design avoids clogging and vapor-binding. The pump is available in capacities from 200 to 7,000 gals. per min. at heads from 5 to 225 ft.

Circle T-42 on Reader-Service Card

High-Voltage Heaters

Far-infrared-ray heaters that can be run on 600 v. have been developed by Edwin L. Wiegand Co., 7500 Thomas Blvd., Pittsburgh 8, Pa. Equipped with a standard screw base, the heating element is fully enclosed and interchangeable with glass-bulb types of heaters. The units are rated at 375 to 1,200 w. for 120- to 600-v. installations.

Circle T-43 on Reader-Service Card

High-Temperature Insulation

A hydrous calcium silicate product is being produced by Owens-Illinois Glass Co., Toledo, Ohio, in blocks and pipe insulation. The material will stand temperatures up to 1,800°F.

Circle T-44 on Reader-Service Card

Vacuum Oven

A vacuum oven for laboratory purposes has been introduced by Precision Scientific Co., 3737 W. Cortland St., Chicago 47, Ill. Applying a vacuum to the drying chamber cuts drying time in half. Accurate thermostatic control is provided.

Circle T-45 on Reader-Service Card

Ultrasonic Cleaner

Hermetically sealed ultrasonic power transducers and improved generators operating at 40 kcps. have been announced by Branson Ultrasonic Co., 194 Richmond Hill Ave., Stamford, Conn. Reduced cost and versatile design of the transducer allow the use of ultrasonic energy in many applications previously considered impractical or economically unfeasible.

Circle T-46 on Reader Service Card

Distilled-Water Heater

A laboratory unit that provides hot water at temperatures set by an adjustable thermostat is being made by Barnstead Still & Sterilizer Co., 2 Lanesville Terrace, Forest Hills, Boston 81, Mass. A tinned copper tank holds 1½ gals.

Circle T-47 on Reader-Service Card

Winch Puller

The Model WP-500 winch puller announced by Robot Appliances, Inc., 7041 Orchard, Dearborn, Mich., is useful for hoists, loading or unloading trucks, powering conveyors, and moving machinery. Load capacity is 500 lbs., and cable speed is 50 ft. per min.

Circle T-48 on Reader-Service Card

Pressure Gauge

A pressure gauge for determining available air pressure at point of use has been developed by U.S. Gauge Div., American Machine & Metals, Inc., Sellersville, Pa. The 2-in.-dia. gauge comes equipped with a hypodermic needle and guard to permit tapping the air hose at the tool.

Circle T-49 on Reader-Service Card

Plastic Decalcomania Colors

Tough plastic colors for decalcomania transfers have been announced by Allied Decals, Inc., 8390 Hough Ave., Cleveland 3, Ohio. The decals are useful for point-of-sale advertising, window transfers, name plates, truck signs, and trademarks.

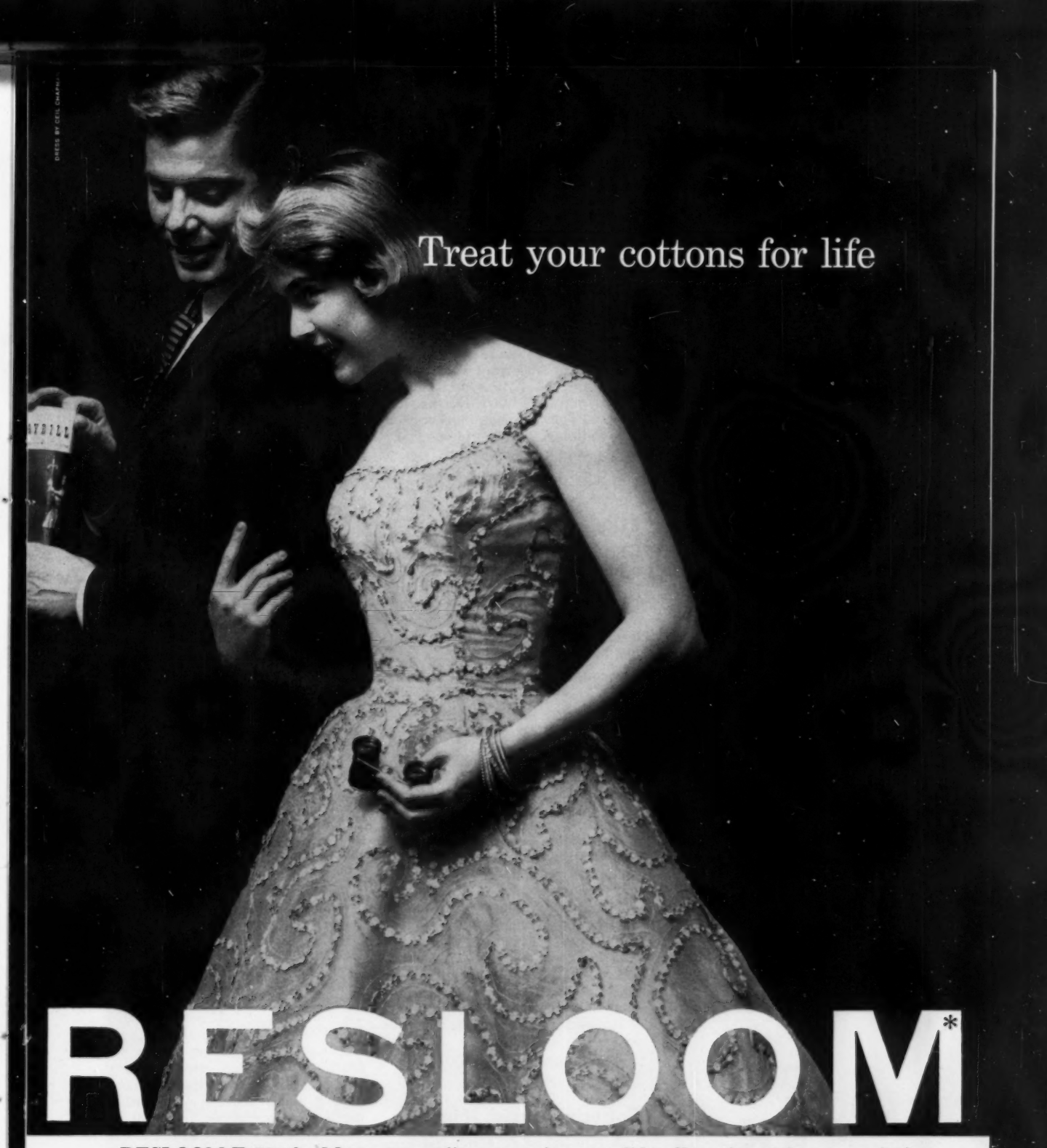
Circle T-50 on Reader-Service Card

Solenoid Water Valve

A soft-seated solenoid-operated floating-piston valve for a wide range of applications has been developed by Minneapolis-Honeywell Regulator Co., Philadelphia, Pa. The valve can be used for humidification, sprinkler, and other textile applications. The power-head housing can revolve 360° with electrical conduit connection.

Circle T-51 on Reader-Service Card

CONTINUED ON PAGE 222



RESLOOM E-50, the Monsanto cyclic urea resin . . . modifies fibers for optimum results!

MONSANTO

*RESLOOM: REG. U.S. PAT. OFF.

Four words summarize the remarkable effectiveness of Resloom E-50 when used to finish cottons: *It doesn't wash out!*

After repeated launderings, cottons treated with this Monsanto cyclic urea formaldehyde resin require little or no ironing. They also retain their crush resistance and dimensional stability.

The reason for the outstanding durability of Resloom E-50 is simple. Instead of reacting with itself, it is designed to react exclusively with the fabric. All active ingredients diffuse into the interior of cellulosic fibers and actually modify fiber characteristics.

Call in Monsanto for expert counsel on how to "treat your cottons for life." In addition to Resloom E-50, Monsanto also supplies melamine finishing resins, tradenamed Resloom HP and M-75, as well as Catalyst AC for stepping up curing efficiency. Write on your letterhead for technical bulletin and experimental samples. Monsanto Chemical Company, Plastics Division, Room 1051, Springfield 2, Mass.

"You'll get more production at the lowest possible cost when you standardize on G&K Textile Leathers."
GRATON AND KNIGHT
G&K
TEXTILE LEATHERS
GRATON & KNIGHT Company
WORCESTER, MASSACHUSETTS

"If it's leather belting, cements or dressings, buy G&K products with assurance."
GRATON AND KNIGHT
G&K
INDUSTRIAL LEATHERS
GRATON & KNIGHT Company
WORCESTER, MASSACHUSETTS

Stencil Cutter

A fast stencil-cutting machine, lightweight, accurate, and easy to keep clean, has been announced by Diagraph-Bradley Industries, Inc., P. O. Box 269, Herrin, Ill. Wide margin guide lines on the base make line alignment simple.

Circle T-52 on Reader-Service Card

Packless Solenoid Valve

The packless Type H solenoid valve developed by Magnatrol Valve Corp., Hawthorne, N. J., was designed for electric control of heavy hydraulic machinery. Typical applications are lifting platforms, hoists, presses, and freight and passenger elevators.

Circle T-53 on Reader-Service Card

Exhaust-Gas Scrubber

Solids, fumes, and odors can be removed from exhaust gases by a hydroprecipitator scrubber developed by Johnson March Corp., Philadelphia, Pa. Efficiencies up to 99% in dust loadings up to five grains per cubic foot have been obtained.

Circle T-54 on Reader-Service Card

Boiler-Return System

A packaged unit that will utilize heat energy from high-pressure condensate has been introduced by Patterson-Kelley Co., Inc., E. Stroudsburg, Pa. Designed to preheat incoming water for processing and boiler feed, the unit consists of a condensate cooler and receiver, feedwater heater, and the necessary pumps, piping, and controls. High-pressure condensate is cooled below the flash point and piped to the receiver. Incoming cold water is preheated in the condensate cooler and piped to hot-water storage. The partially cooled condensate from the receiver is put through the feed-water heater and returned to the boiler as feed.

Circle T-55 on Reader-Service Card

Corrosive-Liquid Heater

A tube-and-jacket heater has been developed by Corning Glass Works, Corning, N. Y., especially for heating corrosive liquids. The 26 tubes are of ¾-in. Pyrex glass, mounted in an 8-in.-dia. steel shell. Heating area is 50 sq. ft. Steam at up to 450° F. is introduced to the shell from a central inlet post. Liquids to be heated travel through the Pyrex glass tubes at approximately 270 gals. per min. Maximum recommended tube temperature is 200° F.

Circle T-56 on Reader-Service Card

Rotary Pressure Joint

An improved rotary joint designed to convey liquids or gas from stationary pipes to revolving drums has been marketed by Seamlex Co., Inc., 41-23 24th St., Long Island City, N. Y. Similar to earlier models in adjusting features, seals, and expansion chamber, the improved joint is more heavily built and employs two ball bearings to support the revolving shaft. This feature prevents misalignment and extends the length of leakproof service.

Circle T-57 on Reader-Service Card

Foot Warmer

An electric foot-warming pad, designed to keep workers healthy and comfortable when exposed to cold floors, has been announced by General Industrial Co., 5750 N. Elston Ave., Chicago 30, Ill. Safe and economical, the 14x21-in. neoprene mat uses less power than a 75-w. light bulb. The price is $7.95.

Circle T-58 on Reader-Service Card

Automatic Transfer Unit

A transfer unit that will automatically remove rolls from a belt conveyor and place them on an overhead trolley conveyor has been developed by Lamson Corp., Syracuse, N. Y.

Circle T-59 on Reader-Service Card

Temperature-Controlled Cabinets

Stainless-steel cabinets designed for testing many materials under controlled conditions of temperature and humidity are available from Hudson Bay Co., Div. of Labline, Inc., 3070 W. Grand Ave., Chicago 22, Ill. The units are offered in 10- to 40-cu.-ft. capacities. Complete equipment includes built-in refrigeration and heating units, blowers, and instruments. Temperatures from 30 to 200° F. can be maintained at humidities of 20 to 95%. All insulation is vapor-sealed.

Circle T-60 on Reader-Service Card

Safety Bags

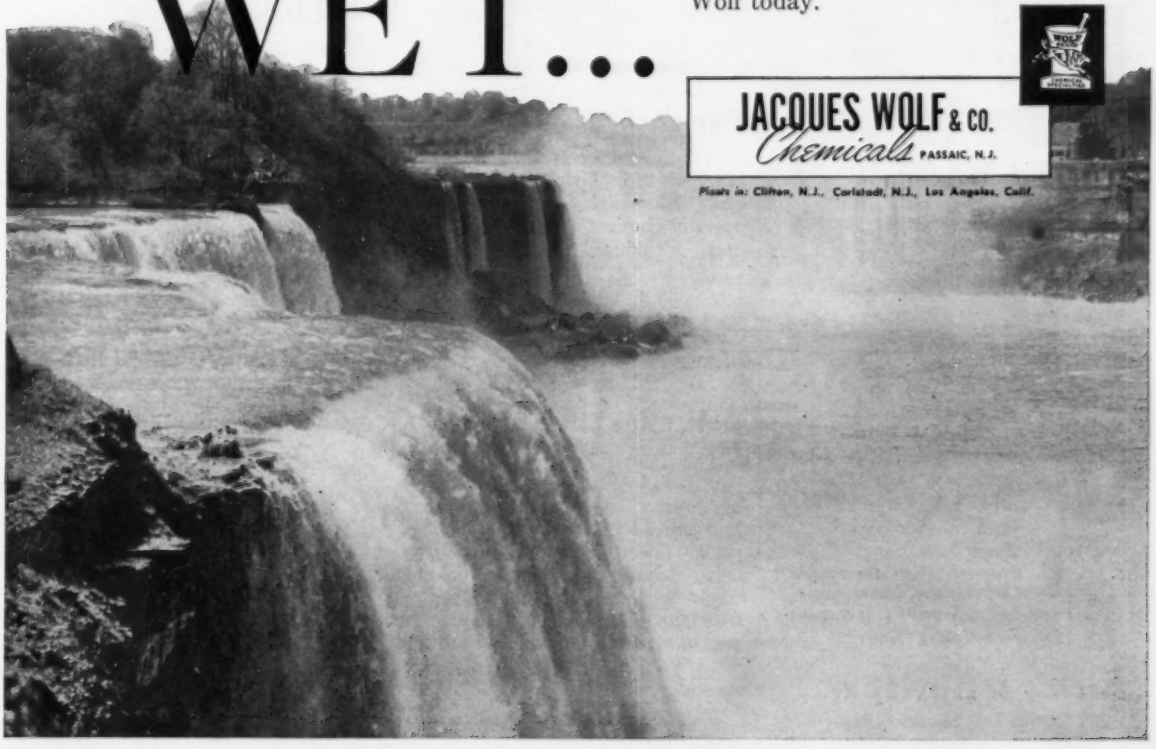
Laboratory pressure bottles can now be supplied with safety bags made of Dynel, according to Carbon & Carbide

if you think this is WET...

It's almost bone dry if you consider that ordinary tap water could be *1000 times wetter* with the addition of Jacques Wolf Wetting Agents.

Making water wetter is only one application for Jacques Wolf Wetting Agents that makes them invaluable in textile manufacture. They have thousands of uses wherever reduction of surface tension, exceptional penetration, saturation, wetting-out, and dispersion are required in the processes of scouring, rinsing, soaping and dyeing.

Test samples and complete data will be sent to you on request and without obligation. Contact Jacques Wolf today.



JACQUES WOLF & CO.
Chemicals PASSAIC, N.J.

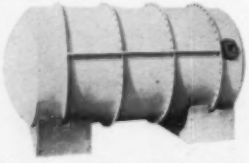
Plants in: Clifton, N.J., Carlstadt, N.J., Los Angeles, Calif.

For more information, write direct or use Reader-Service post card.

POLYBILT®
FIBERGLASS
TANKS

470 GAL. TANK — $324.

New lightweight, high strength, translucent tank for storage of acids, bleach, formaldehyde, alum, saline solutions, solvents and most mill chemicals. Any capacity tank is available at low cost by joining standard tank sections that are mass produced on 250 ton presses from matched metal dies. Write for complete brochure.



310 GAL. POLYBILT TANK — $216.

POLYETHYLENE PAILS
Non-corrosive, unbreakable. Used by hundreds of textile plants. 14 Qt. size $3 ea. in lots of 6. Send for bulletin.

MODEL 53 PORTABLE SPRAY GUN
Operates from inexpensive CO_2 cartridge. Cast aluminum. For all industrial uses. Send for bulletin.

JONES & HUNT, INC.
220 Emerson Ave., Gloucester, Mass.

Chemicals Co., 20 E. 42nd St., New York, N. Y. The bags are highly resistant to rot and mildew, which is an important feature because these bags are seldom dried after use.

Circle T-61 on Reader-Service Card

Laboratory Clamps

Better-gripping surfaces that resist corrosion, heat, and ageing have been incorporated as an integral part of a new line of laboratory clamps made by Fisher Scientific Co., 717 Forbes St., Pittsburgh, Pa. A vinyl plastisol is applied to the Castalloy clamps by hot dipping.

Circle T-62 on Reader-Service Card

Automatic Dock Board

The Hi-Lo dock board, made by Kelley Co., Inc., 316 E. Silver Spring Dr., Milwaukee 17, Wis., automatically adjusts to carrier beds by using the power supplied by the backing truck. Installation is simple and requires no electrical conduits, motors, controls, or hydraulic mechanisms.

Circle T-63 on Reader-Service Card

All-Purpose Truck Line

A line of trucks made in 16 different models has been announced by Wilder Mfg. Co., Inc., Mechanic St., Port Jervis, N. Y. The styles include platform, bin, table, shelf, and box trucks; and each style is available in four sizes.

Circle T-64 on Reader-Service Card

Electric Fork Trucks

A line of electric fork trucks designed especially for high maneuverability, ease of maintenance, and increased operator comfort and convenience has been introduced by Baker-Raulang Co., 1250 W. 80th St., Cleveland 2, Ohio. The model FT line includes trucks with 3,000-, 4,000-, and 6,000-lb. capacities.

Circle T-65 on Reader-Service Card

Device for Lift Trucks

The Yale & Towne Mfg. Co., 11,000 Roosevelt Blvd, Philadelphia, Pa., has built a rotating fork attachment that turns a full load through a 360° circle. The attachment is made to increase dumping speed. On a 10,000-lb. truck, the device can handle loads up to 8,000 lbs. The installation of the attachment does not affect the standard tilt or maximum fork height of the truck.

Circle T-66 on Reader-Service Card

Hangers Stop Vibration

High-deflection heavy-duty vibration hangers have been designed by T. R. Finn & Co., Inc., Industrial Div., Hawthorne, N. J. The hangers (1) prevent transmission of noise, (2) prevent vibration from suspended equipment, and (3) flexibly support piping systems.

Circle T-67 on Reader-Service Card

Boilers With Air Dampers

A secondary air damper is being incorporated in the blower housing of all boilers of 18 to 60 hp. made by National-U. S. Radiator Corp., Oswego, N. Y. This air damper makes it simpler and easier to adjust the secondary air requirements of the boiler. Other advantages result in higher combustion efficiency.

Circle T-68 on Reader-Service Card

Polyethylene Trash Can

A 10-gal. trash can molded of Bakelite polyethylene in one seamless piece is being manufactured by Loma Plastics, Inc., P. O. Box 11277, Fort Worth, Tex. The can is made in several bright colors, is lightweight, does not leak or corrode, and will not dent. The price is $5.98 with the lid and $4.98 without the lid.

Circle T-69 on Reader-Service Card

Coil Dehumidifiers

Central-station-type sprayed coil dehumidifiers that feature heavy construction, complete accessibility, and ease of maintenance are available from American Blower Corp., 8111 Tireman Ave., Detroit 32, Mich. Capacity ranges from 2,300 to 45,900 cu. ft. per min. Water is recirculated at 5 to 84 gals. per min.

Circle T-70 on Reader-Service Card

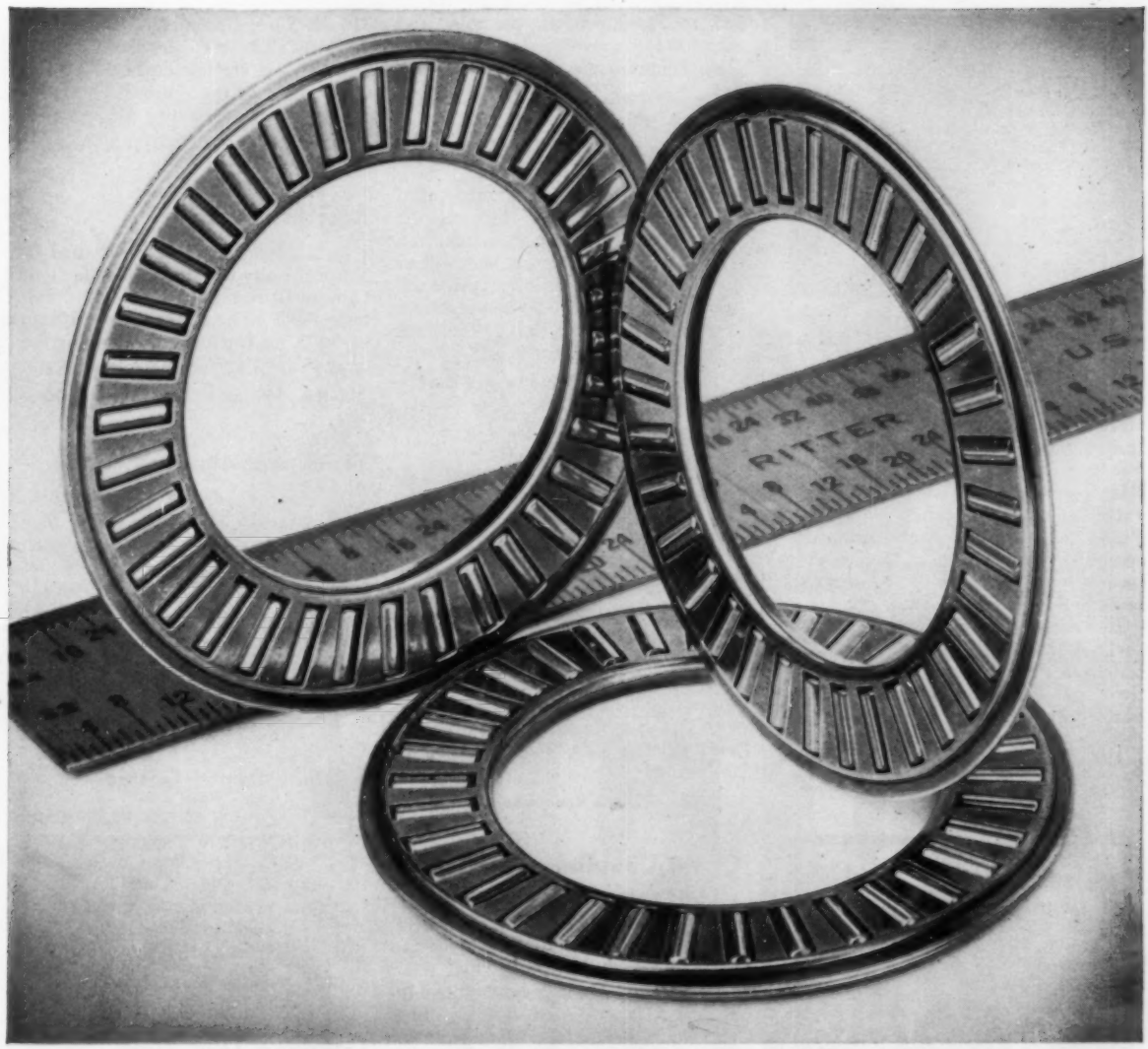
Visual Control Boards

Visual control boards for plant operations that show changeable records are being made by Methods Research Corp., 653 Mosel Ave., Staten Island 4, N. Y. A trial kit costs $4.95, and the standard-size board 24x36 ins. costs $24.50.

Circle T-71 on Reader-Service Card

Heavy-Duty Exhaust Fans

Heavy-duty propeller-type exhaust fans for industrial installations are available from American Blower Corp., 8111 Tireman Ave., Detroit 32, Mich. The fans have capacities from



Here's the **NEW** Torrington Needle **THRUST** Bearing!

Now designers have available a *needle bearing* exclusively for heavy *thrust* loads.

This compact Torrington Needle Thrust Bearing—only .0781" in cross section—is no thicker than an ordinary thrust washer. Yet it brings all the advantages of anti-friction operation at low unit cost for many thrust applications.

Two mating retainer halves, highly accurate steel stampings, are securely joined to form a self-contained unit closed on OD and ID. The bearing can run directly on adjacent parts, hardened to act as races, or on economical hardened and ground flat races. The bearing is piloted on the retainer bore.

In any thrust application where low unit cost, high thrust capacity and compact design are primary factors, consider the Torrington Needle Thrust Bearing. Services of our Engineering Department are available to assist you with design and application.

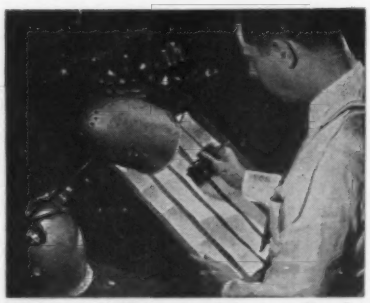
Send for our new Bulletin, "No. 22—Torrington Needle Thrust Bearings," for full information.

Highly successful applications of the Torrington Needle Thrust Bearing have been made in automatic transmissions, governors, steering gears, bevel gears, hydraulic pumps, and torque converters.

THE TORRINGTON COMPANY
Torrington, Conn. • South Bend 21, Ind.
District offices and distributors in principal cities of United States and Canada

TORRINGTON BEARINGS

Needle • Spherical Roller • Tapered Roller • Cylindrical Roller • Ball • Needle Rollers



Magical Black Light Ends Color Matching Rejects

Here at last is a method that takes the guesswork out of color matching — and eliminates rejects. Under Blak-Ray light, even the slightest variations in color tones are visible. Plants report that preliminary inspection under black light is saving its cost every week by eliminating rejects before they happen.

Result: yarn and fabric manufacturers—spinners, weavers, knitters, finishers, bleachers, printers and throwsters — are fast adopting the black light system.

Full details are given in new Case History #111X, available free from the **Black Light Corporation of America,** Distributors for Ultra-Violet Products, Inc. 5114 Walnut Grove Avenue; San Gabriel, California. Distributors in principal cities.

Leaves air mint fresh!

Mintol

the multi-purpose industrial disinfectant with the fresh mint leaf aroma

MINTOL disinfectant has a coefficient of 9. Diluted half a cup to the pail of water, it meets the new Use Dilution Confirmatory Test.

KILLS BACTERIA
SANITIZES THE SURFACE
DEODORIZES

For free sanitary survey of your premises ask your Dolge service man

dependable DOLGE WESTPORT, CONNECTICUT

587 to 12,800 cu. ft. per min. and are used to remove smoke, fumes, and other contaminants from buildings.

Circle T-72 on Reader-Service Card

Protective Metal Coating

A protective metal coating called Dimetcote gives steel structures the same protection that galvanizing gives. The material may be applied with a brush or spray gun, and the cost is less than 6¢ per sq. ft. The manufacturer is Amercoat Corp., 4809 Firestone Blvd., South Gate, Calif.

Circle T-73 on Reader-Service Card

Lift Truck

A method of handling building materials such as brick, concrete block, board, etc. in unit loads of approximately 1,000 lbs. has been announced by Market Forge Co., 35 Garvey St., Everett 49, Mass. A lift truck, called Marforge Contractors' Load-Lift, is used to move the material. The material is stacked in a T-shaped load so that the wheels of the truck can go under it. Then the material is banded with one or more steel straps. No pallets, pallet boards, or skid platforms are needed.

Circle T-74 on Reader-Service Card

Chain Couplings

Flexible chain couplings designed to permit sufficient relative movement between the hubs to accommodate slight angular and parallel shaft misalignment are being manufactured by Dodge Mfg. Co., Mishawaka, Ind. The chain is double-width and can be removed quickly by removing only one coupling pin.

Circle T-75 on Reader-Service Card

6,000-Lb. Truck

A 6,000-lb. fork truck has been added to the line of gasoline-powered trucks manufactured by Baker-Raulang Co., 1250 W. 80th St., Cleveland, Ohio. The truck, model FG-60, features a low center of gravity, self-equalizing hydraulic brakes, and a low-pressure hydraulic system. There are two speeds forward and two in reverse. Top full-load travel speed is 7 mph. at 1,900 rpm.

Circle T-76 on Reader-Service Card

Rubber Dock Bumpers

Moulded-rubber dock bumpers that are said to be practically indestructible are being produced by Kelley Co., Inc., 316 E. Silver Spring Dr., Milwaukee 17, Wis. The bumpers are hard and resilient and are not damaged by the sharp edges of truck beds. They also withstand oil, gas, water, and weather.

Circle T-77 on Reader-Service Card

Reel for Hose

A hose reel designed to be used in out-of-the-way places is available from Clifford B. Hannay & Son, Inc., Westerlo, N. Y. The reel is made for hose up to 3 ins. in diameter and can be equipped with a motor or hand crank.

Circle T-78 on Reader-Service Card

Truck To Handle Barrels

A barrel-handling truck that requires no tipping or pick-up space when barrels are stored against each other has been announced by Valley Craft Products, Inc., 760 Jefferson Ave., Lake City, Minn. An automatic clamping hook makes it possible for a single operator to load the barrels on a truck easily.

Circle T-79 on Reader-Service Card

Vernier Depth Gauge

A quick-acting vernier depth gauge for machinists and mechanics is available from George Scherr Co., Inc., 200 Lafayette St., New York 12, N. Y. The tool is made in two models for 3- and 6-in. measuring capacity. They cost $8.50 and $9.50.

Circle T-80 on Reader-Service Card

Coupling That Slips

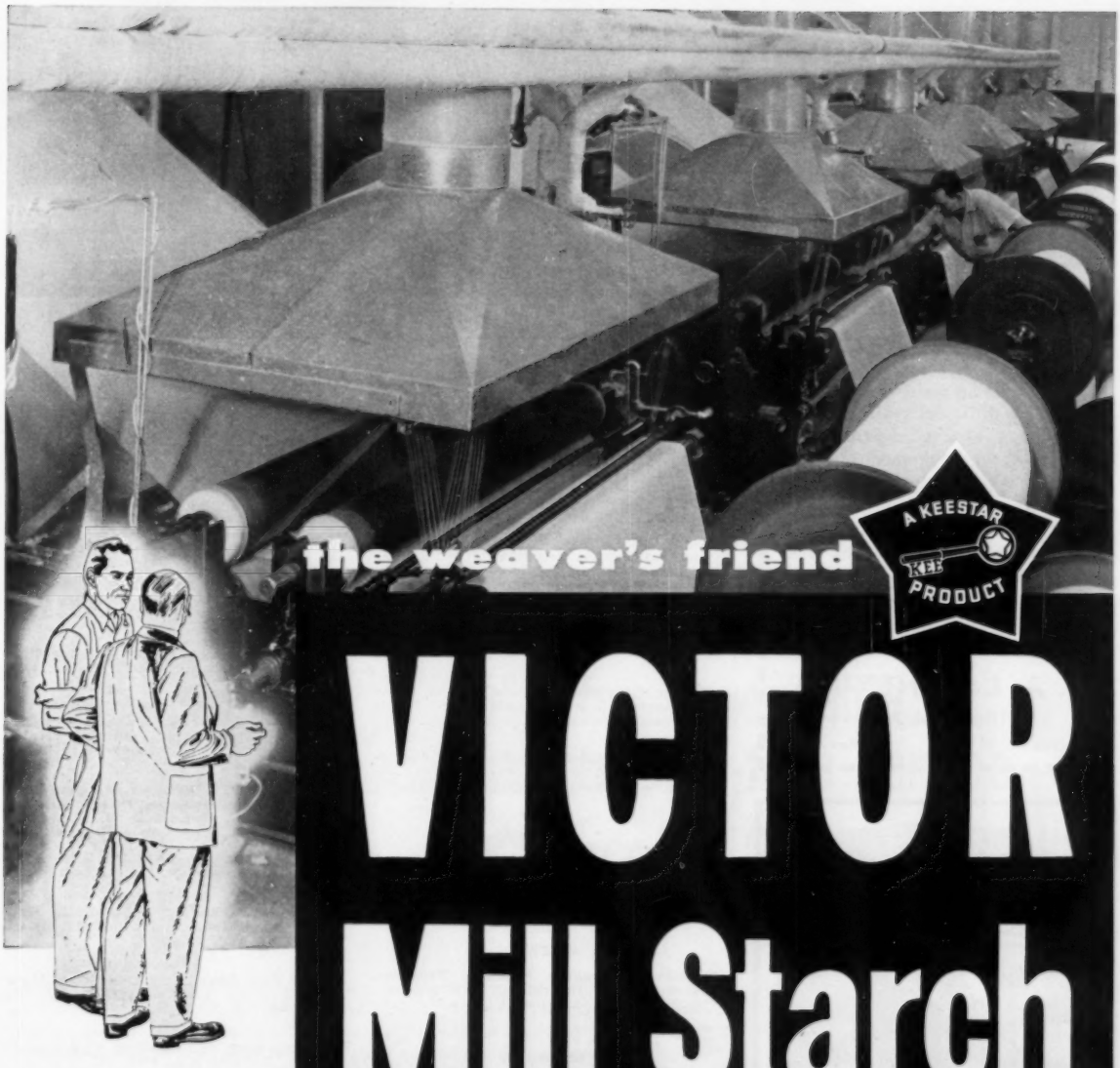
A torque-limiting coupling to be used between a motor and a machine is being made by Techniflex Corp., Port Jervis, N. Y. The coupling is a conventional flexible coupling up to an adjusting limit. Beyond this limit, the coupling slips. The couplings are easily adjusted from 50 to 150% of their nominal ratings.

Circle T-81 on Reader-Service Card

Gasoline Tractor

A gasoline-powered tractor with space for a rider has been announced by Colson Corp., Elyria, Ohio. The truck is small in size, but it hauls loads up to 15 tons. The tractor has a simple coupling device to hook to hauling equipment. The unit travels at 4 mph., and the list price is $1,300 F.O.B. Elyria.

Circle T-82 on Reader-Service Card



VICTOR Mill Starch

always uniform and backed by Keever Service

Charles C. Switzer, Vice President
TEXTILE SALES DIVISION
1200 S. C. NATIONAL BANK BLDG.
GREENVILLE, SOUTH CAROLINA

THE KEEVER STARCH CO. ★ GENERAL OFFICES ★ COLUMBUS 15, OHIO

Processors of corn, wheat and blended starches for industry since 1898

 For more information, write direct or use Reader-Service post card.

Got Your Fingers Crossed

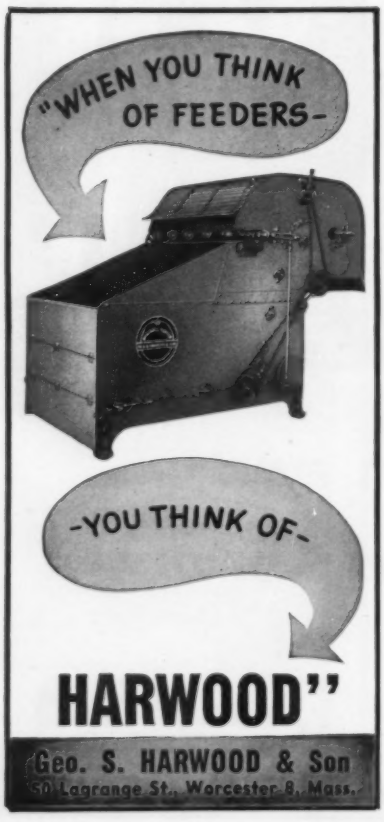
. . . Not With LAZENBY!

There's no guesswork, or trust to luck with Lazenby filling winders. Made exactly and precisely for your own requirements, to give you efficient service and maximum yardage every time, all the time.

Just send us a small supply of your yarn and we'll wind and return with Test Wind Report and Catalog.

Automatic Cop Winder now in production and 80% labor saving.

F. A. LAZENBY CO.
3106 ELM AVE.
Baltimore 11 Maryland



CALENDAR

June

Materials Handling Institute Exposition of 1956, Public Auditorium, Cleveland, Ohio, June 5 to 8.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., June 6.

Canadian Textile Seminar, Queen's University, Montreal, Canada, June 6 & 7.

National Association of Hosiery Manufacturers and Hosiery Industry Conference, annual meeting, Hotel Roanoke, Roanoke, Va., June 14 to 16.

Woolen Yarn Manufacture Course, summer session, Lowell Technological Institute, Lowell, Mass., June 18 to 29.

Southern Textile Association, annual convention, Mayview Manor and Green Park Hotel, Blowing Rock, N. C., June 21 to 23.

July

Gordon Research Conference on Textiles, Colby Junior College, New London, N. H., July 9 to 13.

August

Textile Technology Summer Program, Massachusetts Institute of Technology, Cambridge, Mass., August 20 to 31.

September

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Sept. 5.

The Fiber Society, fall meeting, Warwick Hotel, New York, N. Y., Sept. 6 & 7.

Perkin Centennial, Waldorf-Astoria Hotel, New York, N. Y., Sept. 10 to 15.

AATCC, national convention, Waldorf-Astoria Hotel, New York, N. Y., Sept. 13 to 15.

Combed Yarn Spinners Association, Cavalier Hotel, Virginia Beach, Va., Sept. 27 & 28.

National Association of Cotton Manufacturers, annual meeting, Wentworth-By-The-Sea, Portsmouth, N. H., Sept. 27 & 28.

Northern Textile Association, 4th Annual Meeting, Wentworth-By-The-Sea, Portsmouth, N. H., Sept. 27 & 28.

October

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 1 to 5.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Oct. 3.

AATCC, Piedmont Sect., annual meeting, Charlotte Hotel, Charlotte, N. C., Oct. 6.

North Carolina Textile Manufacturers Association, annual meeting, The Carolina Hotel, Pinehurst, N. C., Oct. 10 to 12.

Textile Operating Executives of Georgia, A. French Textile School, Georgia Institute of Technology, Atlanta, Ga., Oct. 13.

ASTM, Committee D-13, fall meeting, Warwick Hotel, New York, N. Y., Oct. 16 to 19.

International Knitting Machinery & Accessories Exhibition, Granby Halls, Leicester, England, October 17 to 27.

Southern Textile Methods and Standards Association, fall meeting, Clemson House, Clemson, S. C., Oct. 18 & 19.

AATCC, Northern New England Sect., Science Park, Boston, Mass., Oct. 19.

Protective Packaging & Materials Handling Exposition, Kiel Auditorium, St. Louis, Mo., Oct. 21 to 24.

Carded Yarn Assn., annual meeting, Hotel Fort Sumter, Charleston, S. C., Oct. 24 & 25.

Alabama TOE, fall meeting, Thach Auditorium, Auburn, Ala., Oct. 27.

November

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Oct. 7.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Nov. 16.

22nd National Exposition of Power and Mechanical Engineering, New York Coliseum, New York, N. Y., Nov. 26 to 30.

December

AATCC, Northern New England Sect., annual meeting, Hotel Vendome, Boston, Mass., Dec. 1.

AATCC, South Central Sect., Hotel Patten, Chattanooga, Tenn., Dec. 1.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Dec. 5.

AATCC, Southeastern Sect., Atlanta, Ga., Dec. 8.

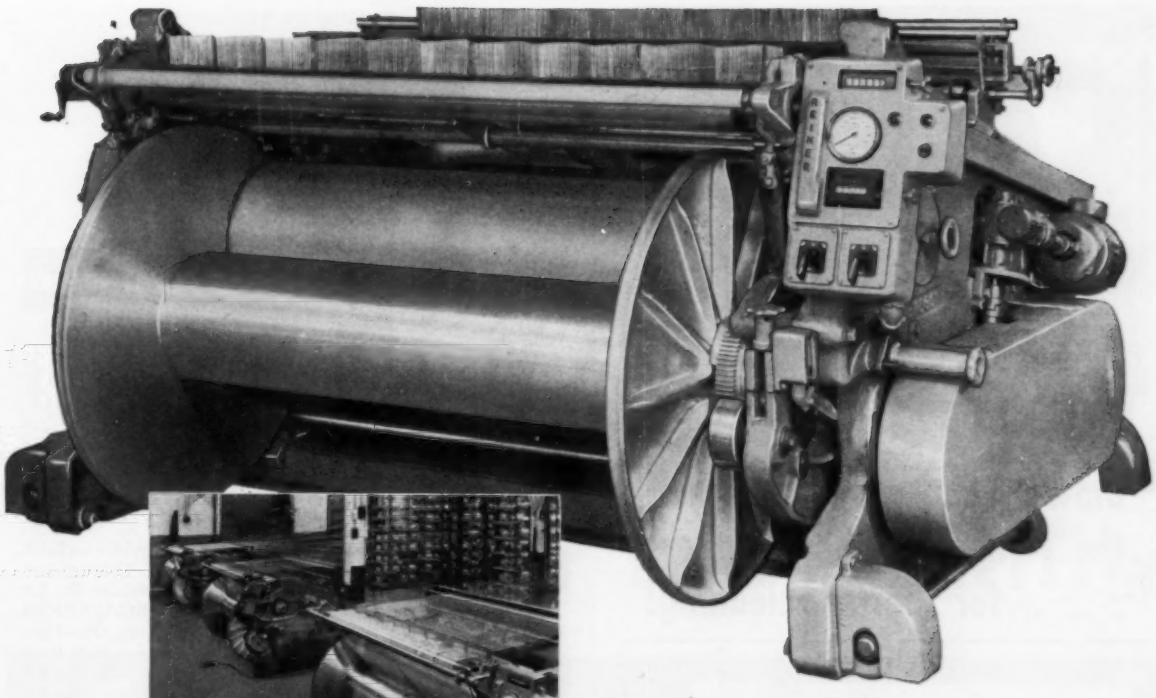


Photo Courtesy Woodside Mills Simpsonville, S. C.

for dependable, trouble-free service –

REINER *Heavy Duty* BEAMING MACHINE

Designed in cooperation with the trade, it supplements the widely used line of high speed REINER WARPERS and the most up-to-date creels for all needs. Model HD is the result of our experience in building preparatory equipment, and of our continuous and close contacts with progressive mill men throughout the industry. A richly illustrated catalog is yours for the asking.

SOME FEATURES OF THE MODEL HD

Spindle drive—Flange diameters up to 36"—Length of beam to customers specifications—Suitable for dye beams—Speed range from 100 to 900 yards per minute through rheostat control.—Independent adjustment for inching and starting speed, provision for foot-operated inching switch—Rheostat geared to presser roller to maintain pre-set constant yarn speed—Traverse motion—Electric beam doffing device.—Stop motions—Lateral motions to move unit easily from creel to creel—Comb oscillating movement—Double acting brakes on all rotating units for quick synchronized stop—Centralized control panel—Typical Reiner type heavy frame constructions—Lower overall working height of machine—Comb arrangement permits easy access for operator—7½ H.P. direct current motor with generator.

THE REINER LINE

Tricot Machines—Simplex (Double Knit) Machines—Raschel Machines—Tulle Machines—All types of Warpers, Beamers and Creels—75 Gauge (4 section) Full-Fashioned Hosiery Machines—Full-Fashioned Sweater Machines—Schaffhouse Flat Power Knitting Machines—Automatic Schiffli Embroidery Machines (10 and 15 yds.)—Multihead Automatic Jacquard Embroidery Machines—Automatic Bobbin Winding Machines (for stitching and quilting)—Jacquard Pattern Repeating Machines—Reiner Famatex Tenters—Rabo Permanent Pleating Machines—Menschner Gauged, Doubling, Measuring and Rolling Machines—Menschner Cloth Control and Marking Device—Ready Spare Parts Service for all Reiner Machines.

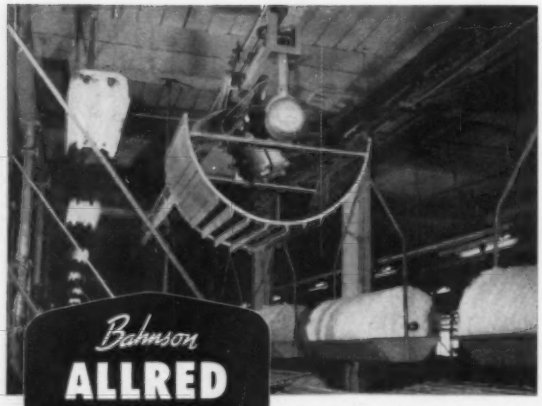
YOU DO WELL TO STAY AHEAD WITH REINER

ROBERT REINER INCORPORATED

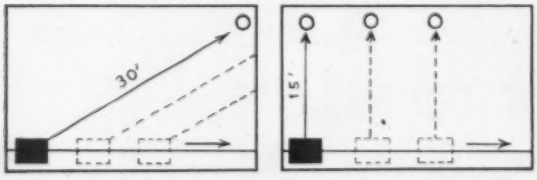
10 MINUTES FROM TIMES SQUARE

Take Bus Nos. 61 or 67, from Platform No. 60, Port Authority Bus Terminal, 41st Street and 8th Avenue, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505. From New York City call LONGACRE 4-6882.

FOUNDED IN 1903 **550-564 GREGORY AVENUE, WEEHAWKEN, NEW JERSEY**



Blows head-on at one-half the range of other cleaners . . . for better cleaning!



Other cleaners strike objective at angles from greater distances.

The Bahnson-Allred strikes objective directly at ½ the distance of other cleaners.

Blows Perpendicular to track to deliver direct, head-on air blasts. This special construction enables the Allred to clean more thoroughly with continuous head-on air blasts from ½ shorter range than other cleaners.

Cleans at Less Cost with greater efficiency. The Allred needs only a ⅓ horsepower motor for effective air delivery. (Available also with 1 H.P. motors for special applications.) Its head-on air blasts have been test-proven to clean more effectively than other approaches.

Patented Index Feature progressively adjusts the fan to clean selected areas in a pre-determined pattern. Pattern is easily set and varied for different needs.

Added Advantages. The Allred fan oscillates as it travels along the track to produce a varying angle of blow at each automatically adjusted setting. For further airflow control a U-Shield with adjustable vanes is furnished.

WRITE US TODAY

for detailed information. Ask for Technical Bulletin 21-A

Bahnson
COMPANY
WINSTON-SALEM, N. C.

AIR CONDITIONING • CLEANING • VACUUM COLLECTION

NEWS about SUPPLIERS

AKRON SPOOL & MFG. CO., Cuyahoga Falls, Ohio—Is moving its plant to High Point, N. C. Operations will begin about July 1. . . . **ALLIED CHEMICAL & DYE CORP., NATIONAL ANILINE DIV.**, New York, N. Y.—Has named John J. Reed product manager of isocyanates and M. S. Rhodes products manager of resin chemicals. . . . **BLACKMAN-UHLER CO.**, Spartanburg, S. C.—Has named William A. Coleman and Harry L. Parker, Jr., to the sales staff. A. F. Neister, Jr., has joined the laboratory as a technician. . . . **BORG-WARNER CORP.**, Chicago, Ill., and **YORK CORP.**, York, Pa.—Have merged their operations. York will continue to operate with its present policies, management, and personnel. . . . **CENTURY ELECTRIC CO.**, St. Louis, Mo.—Has named Gunar Moe district manager of the New York, N. Y., office.

JOHN W. FULBRIGHT (left) has been named to the Charlotte, N. C., sales staff of Ciba Co., Inc. **JOHN G. SIGNORINO** (center) has been named to Ciba's sales staff in the New England area. **L. G. LOVIN, JR.**, (right) has been named to direct the development of nonwoven and batting sales for Celanese Corp. of America, Textile Sales Development Dept., New York, N. Y.

CHEMSTRAND CORP., Decatur, Ala.—Has named Harold B. Ackerman assistant promotion manager. Richard F. Eshleman has been named to the technical sales service department, and Richard W. Nelson has joined the company as a textile technician. Robert H. Hughes has been named to the sales staff as an Acrilan sales specialist. The company has opened a new district office at 3½ Overwood Rd., Akron, Ohio, under the supervision of W. Curtis Melton, Jr. . . . **CIBA CO.**, New York, N. Y.—Has named John F. Clark and Jack B. Williamson dye technicians in the Charlotte, N. C., office. . . . **DOBECKMUN CO.**, Cleveland, Ohio—Has been licensed to conduct operations under patents owned by National Research Corp., Cambridge, Mass., relating to continuous vacuum metallizing. . . . **E. I. DU PONT DE NEMOURS & CO., INC.**, Wilmington, Del.—Has announced the following appointments: Raymond G. Grills, director of the Sales Programs Div.; Truman C. Welling, assistant director of sales; Millard G. Gamble, Charlotte, N. C., sales manager; Charles D. Wenrich, New York, N. Y., sales manager; V. Ward Smith, Philadelphia, Pa., sales manager; H. G. Buckley,

TECHNICAL BULLETIN ON *UVERSOFT* "D"

Send me technical information on Harshaw Uversoft "D"

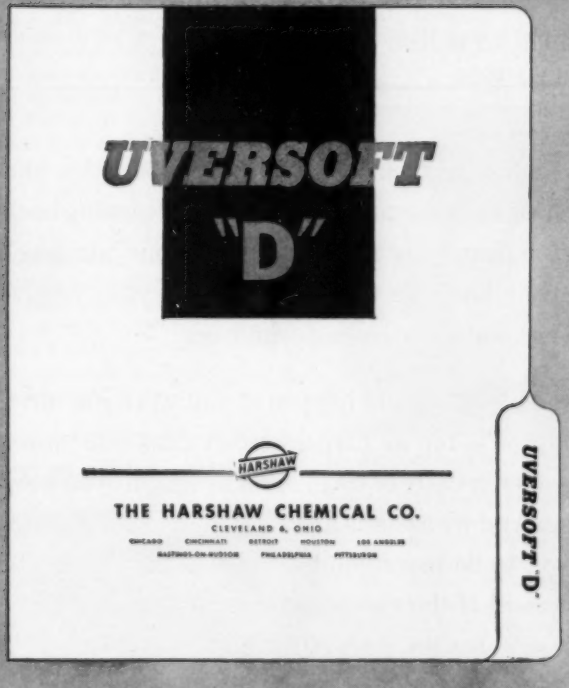
My Name_____

Company Name_____

Street Address_____

City_____ Zone____ State_____

yours for the asking



Imparts Soft Hand With Little Reduction In Moisture Absorbency

UVERSOFT "D" is a cationic surface active agent which produces a full, soft hand with little, if any, reduction in moisture absorbency of the TREATED material. It can be exhausted from a long bath, and has an excellent retention in an aqueous system. UVERSOFT "D" provides a maximum economy in application and use.

UVERSOFT "D" is an outstanding anti-static agent. It should be considered for situations where the accompanying softening action is not objectionable.

Send for folder containing complete technical information.

THE HARSHAW CHEMICAL CO.

1945 EAST 97th ST., CLEVELAND 6, OHIO

Providence, R. I., sales manager; Howard P. Brokaw, Akron, Ohio, sales manager. . . . **EMERY INDUSTRIES, INC.**, Cincinnati, Ohio—Has formed two new sales departments. The new Organic Chemical Sales Dept. will be headed by Robert F. Brown. Robert Hull and Vern Colby have been named assistant sales managers in this department. The new Fatty Acid Sales Dept. will be headed by G. William Boyd.

E. T. FLANAGAN (left) has been named to the board of the Fairbanks Co., New York, N. Y. W. K. METCALFE (center) has been elected a director and vice president in charge of sales at J. O. Ross Engineering Corp., New York, N. Y. WILLIAM L. PARCELL (right) has been named vice president of the Ridge Tool Co., Elyria, Ohio.

FAFNIR BEARING CO., New Britain, Conn.—Has promoted Robert W. Powell to general sales manager. . . . **FISHER MFG. CO.**, Hartwell, Ga.—Has completed its new plant. . . . **GIBSON TEXTILE SPECIALTY CO.**, Decatur, Ga.—Has named W. C. Gibson, Jr., manager. . . . **GLYCO PRODUCTS, INC.**, New York, N. Y.—Has named John P. Sheehy to the technical service and sales staff. . . . **GOODYEAR TIRE & RUBBER CO.**, Akron, Ohio—Has named J. S. Bruskin as general manager of the films and flooring division. Donald L. Hart has been named to the vinyl-film sales staff. William T. Smith has been named as sales representative for the Chemical Div. Mr. Smith will be located in the New York, N. Y., office. . . . **HEMPHILL CO.**, Pawtucket, R. I.—Has elected Benjamin R. Ebersman

LEON E. SEIDEL (left) has joined the Lurex Yarn Div. of Dobeckmun Co., New York, N. Y. JACK BRADT (center) has been named sales manager of the Truck Div., Howe Scale Co., New York, N. Y. HENRY L. YOUNG (right) has rejoined the Textile Colors Div., Interchemical Corp., Hawthorne, N. J., as assistant to William J. Rothemich.

president. . . . **INSTRUMENT DEVELOPMENT LABORATORIES**, Needham Heights, Mass.—Has named Donald R. Hall sales engineer. . . . **KOPPERS CO.**, Pittsburgh, Pa.—Has named John W. Pool, Jr., manager, sales department, Chemical Div. . . . **MARLER CHEMICAL CO.**, Cleveland, Tenn.—Has named William F. Luther technical director. . . .

Are Your Brakes Locking?

Are you suffering from a slowdown in production and distribution because your receivables are moving back to cash too sluggishly for the needs of your business? Would your business move into high if your receivables were suddenly turned into cash?

That's just what would happen if you were Factored by Crompton — for we turn all receivables into immediate cash on a daily basis . . . just as long as you keep shipping. And we assume all credit risks, thus encouraging you to do more volume . . . volume you might fear to credit if the risk was yours.

CROMPTON RICHMOND COMPANY INCORPORATED FACTORS

The Human Factor

CROMPTON-RICHMOND CO., INC.
1071 Avenue of the Americas, New York 18, N. Y.
Crompton-Richmond-Joel Hurt Co.
Glenn Building, Atlanta 1, Georgia

BRISTOL'S

Instrumentation News

• *News of instrumentation and automatic control in modern industry* •

New vacuum process for stable powdered fruit juice

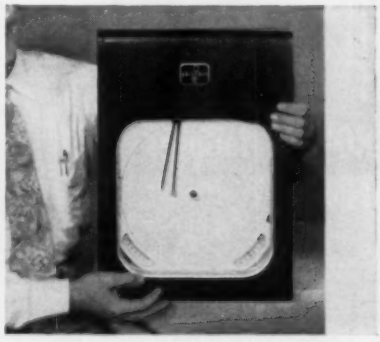
Powdered fruit juices that keep well for months, have no "off" odor or taste, and can be reconstituted simply by adding water are the result of a new vacuum process developed by the Western Utilization Research Branch of the U. S. Department of Agriculture.

Orange, lemon, grapefruit, apple, tomato, grape or pineapple juices are processed by the new method, called "puff drying." A key feature of puff drying is continuous close pressure control in the range 1 to 4 mm Hg absolute by a Bristol Absolute Pressure Controller. These precision instruments are available with a total range as low as 0 to 6 mm Hg absolute if desired for such applications.

Constant pH for water plant

Despite wide variations in both flow and initial pH, this large municipal filtration plant puts out water at constant pH. The reason: a Bristol telemetering and control system. One of hundreds of similar problems solved by Bristol instruments.

Built-in calibration gives easy service



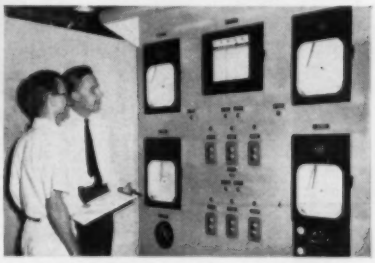
Simplest and easiest pneumatic control system on the market to service, the Bristol Series 500 Free-Vane Controller is exactly calibrated *with only one simple adjustment —even after complete disassembly and reassembly with replacement of parts.*

The reason? All working parts of the Series 500 Controller are so accurately designed and manufacturing tolerances are so closely held that calibration is effectively built into the controller.

And, of course, all parts are interchangeable with those of any other Series 500 Controller. Almost anyone can service the Series 500!

Versatile Series 500 instruments are available in high-stability wide band widths to 400% and for on-off, 30% proportional, full proportional, reset, derivative, and reset plus derivative control. Write for complete information.

99% pure MSG produced with air control



Helping produce flavor-boosting monosodium glutamate (MSG) with at least 99% purity (in the fine chemical class) is the job of these Bristol air-operated controllers at Industrial Grain Products, Ltd., Montreal, a division of Ogilvie Flour Mills Co. Ltd. The Bristol instruments control absolute pressure and steam flow, and liquid levels in the new 1½ million dollar plant. Derivative action is used by some of the controllers for closer control.

Automation boosts foam rubber production

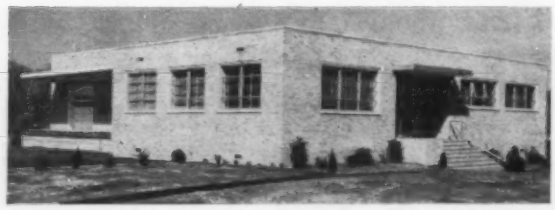
Automation is often thought of in terms of plans or even dreams; here at the Buffalo Foam Rubber Products Plant of the Dunlop Tire and Rubber Corporation, it is a reality. This automatic plant, designed and built by Mechanical Handling Systems, Inc., Detroit, uses Bristol Dynamaster® Electronic Instruments and Automatic Controllers as part of a process employing today's most advanced automatic production techniques. The result—greater efficiency and productivity, lower costs, improved product, and stronger competitive position. 6.26

Want more data on these Bristol instruments for your indicating, recording, or control needs? Write The Bristol Company, 103 Bristol Road, Waterbury 20, Conn.

BRISTOL *POINTS THE WAY IN HUMAN-ENGINEERED INSTRUMENTATION*

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

HARRY MILLER CORP., Philadelphia, Pa.—Has named Ben Purdy to the sales staff in the Philadelphia area. . . . **MONSANTO CHEMICAL CO.**, St. Louis, Mo.—Has transferred D. Ralph F. Nickerson to the Shawinigan Resin Corp., Springfield, Mass. . . . **PITTSBURGH PLATE GLASS CO.**, Pittsburgh, Pa.—Has named P. Dudley Kaley manager of sales for the Fiber Glass Div. . . . **SKF INDUSTRIES, INC.**, Philadelphia, Pa.—Has appointed James H. Sutherland Midwestern regional sales manager. . . . **STANDARD MILL SUPPLY CO.**, Pawtucket, R. I.—Has elected William H. Streit president. Mr. Streit has purchased controlling stock from LeRoy F. Ott, retired president. . . . **SUN CHEMICAL CORP.**, Long Island City, N. Y.—Has named Tarlton F. Parsons to the Warwick Chemical Co. Div., where he will be responsible for converter and manufacturer relations. . . . **TAYLOR INSTRUMENTS COS.**, Rochester, N. Y.—Will locate its laboratories and lecture rooms in the Eastman Laboratory Building on the former University of Rochester campus. . . . **TORRINGTON CO.**, Torrington, Conn.

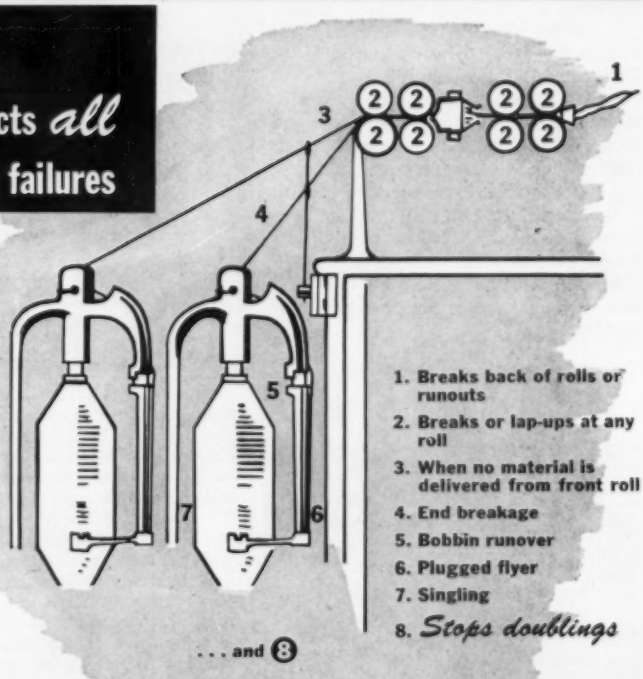


GEIGY DYESTUFFS, Div. of Geigy Chemical Corp., New York, N. Y., has opened this new office, laboratories, and warehouse in Chattanooga, Tenn. E. V. Helms is in charge of this new division. The entire Southern area was previously serviced from the Charlotte, N. C., office.

KEEVER STARCH CO., Greenville, S. C., has named SAM S. RICE, JR., (left), C. B. PHILLIPS (center), and R. F. GUILL (right) to the sales staff.

—Has named John W. Beaber manager of the Philadelphia, Pa., office of the Needle Div. Walter L. Moore, Jr., has been named sales representative for the Needle Div. in New York, N. Y. . . . **WARNER & SWASEY CO.**, Cleveland, Ohio—Has named Raymond O. Perrault and Chester J. Haug field engineers. . . . **WATDES CORP.**, Charlotte, N. C.—Has been formed to handle import and export of textile machinery and supplies. Officers are: S. P. V. Desmond, president; C. E. Watson, vice president; J. A. Olwell, secretary and treasurer; Mrs. Hazel H. Hunter, assistant secretary.

Only ADAMSTOP* detects all of these ROVING failures



No other stop motion, regardless of cost, detects more than a few of the roving defects shown. Yet Adamstop costs less to buy, less to install, and less to operate. Mill records show an average return on investment of 73½% on roving labor savings alone. They also credit Adamstop with a 10% to 30% reduction of ends down in spinning.

Adamstop is remarkably compact. Instant knock-off action eliminates the need for bulky, aisle-cluttering collection boxes. Control boxes can be mounted directly on the frame itself or on walls.

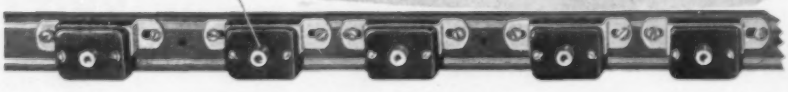
Write, wire, or call for complete information and prices.

Export Agents: Lendt & Co., Inc.
535 Fifth Ave., New York 17, N. Y.

See it at Booth No. 110A, Southern Textile Exhibition

ADAMS, INC. 4 East Lewis Plaza, Greenville, S. C.

*Pat. in U.S.A. & 12 foreign countries.



You get good fibre lay and a tough, smooth size film with...

GLOBE® PEARL STARCHES

Operator notes more uniform film applied by Globe Pearl Starch.

Globe Starches are clean and uniform. You can depend on them to produce a high grade warp.

The viscosity of Globe thick boiling starches stays constant during continuous pumping and circulation, giving maximum warp strength and weavability.

Globe brand starches are particularly indicated on heavy goods. Shedding can be minimized and chafing practically eliminated by the tough size film you get with Globe. Also, there are special Globe Starches for use in homogenizers, which give excellent results.

Ask the man from Corn Products. Ready to assist you in any way, he has at his disposal the most complete laboratory and technical facilities in the industry. The man from Corn Products can also provide engineering service for the installation of bulk-handling equipment. Write or phone for information, there is no obligation.

1906 • **50th ANNIVERSARY** • 1956
CORN PRODUCTS REFINING COMPANY
17 Battery Place, New York 4, N. Y.

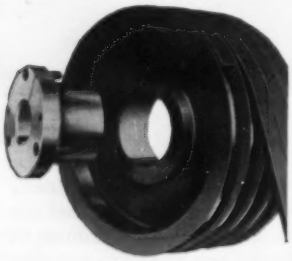
Corn Products makes these famous starches for the textile industry—
Eagle • Foxhead • Globe • Hercules • Ten-O-Film • Globe Dextrines & Gums

The adjustable-speed wedgbelt drive is a Combination...

... of American Adjustable-Diameter Sheaves, allowing stepless speed variation by internal change of pitch diameter of the sheave. Simultaneous flange movement keeps belt alignment constant. Exclusive *double-taper* hub locks flanges in position, locks sheave tight to shaft ... assures positive speed control.

... of American Wedg-Tite Bushings with exclusive *steeper taper* for fast installation and easy removal, uniform compression, positive alignment, and maximum clamping action on the shaft.

... of American Wedgbelts, mold-cured to vary less than ¼ of 1% in length, with strict uniformity in taper, thickness and width. Dacron* cords in Super-Service Wedgbelts are 2½ times stronger than rayon, withstand shock loads and high starting torques.

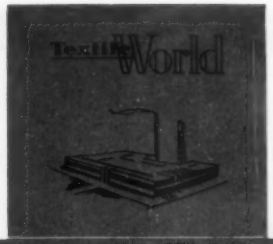


... of American Wedg-Tite Companion Sheaves, precision-matched to the same taper of the bushing, the exact sidewall angle of the belt. Machined to a satin finish, with accurate balance and concentricity, they lower frictional power-loss, increase plant efficiency.

THE RIGHT COMBINATION FOR MAXIMUM VARIATION OF MACHINE SPEEDS

*Reg. TM. E. I. DuPont de Nemours & Co., Inc.

The American Pulley Company
4226 Wissahickon Avenue
Philadelphia 29, Pa.



NEWS about MILLS

COTTON MILLS

Amazon Cotton Mills, Thomasville, N. C., will install an additional 24 Saco-Lowell Gwaltney frames.

American Thread Co., Clover, S. C., has purchased 16 Saco-Lowell Model #56 combers.

Ames Textile Corp., Cleveland, Ga., is installing Whitin American System Superflex spinning frames.

Bates Mfg. Co., Lewiston, Me., is negotiating for the purchase of the Tullahoma and Dalton, Ga., plants of National Chenille Co.

Bigelow-Sanford Carpet Co., Landrum, S. C., is nearing completion of its new 243,000-sq.-ft. plant. Air conditioning is being installed in both the office and manufacturing areas.

Carlton Yarn Mills, Carlon Div., Kings Mountain, N. C., is modernizing its Whitin Model B spinning frames by applying Whitin Super-Draft.

China Grove Cotton Mills, China Grove, N. C., has ordered 48 Gwaltney frames and six 12x6 roving frames from Saco-Lowell.

Climax Spinning Co., Belmont, N. C., is modernizing its opening and picking room. Saco-Lowell openers and auxiliary accessories will be installed.

Columbia Narrow Fabric Co., Shannock, R. I., has plans under way to build an elastic-fabric plant in Rolling Fork, Miss.

Cone Mills Corp., Mineola Plant, Gibsonville, N. C., has started a $2,000,000 modernization plan. Saco-Lowell Model SG-1 frames will be installed. Production is being changed from colored to gray goods. The company will install 105 looms in its Haynes Plant. The New York office is being moved to 1440 Broadway.

Crystal Springs Bleachery, Chickamauga, Ga., has ordered 12 Whitin long-draft roving frames, 12x6½ in., and 38 Whitin Superflex spinning frames, 4-in. gauge, 216 and 264 spindles. An additional 39 new Whitin F2 spinning frames, 3¾-in. gauge will also be installed.

Dacotah Cotton Mills, Lexington, N. C., has ordered 24 Whitin Superflex spinning frames, 3¾-in. gauge.

Dan River Mills, Inc., Danville, Va., has opened a new warehouse in Dallas, Tex. Odis Hughes will coordinate and direct the activities.

Dyersburg Cotton Products Co., Dyersburg, Tenn., has started a $500,000 expansion program. New spinning frames are being installed in the cotton and wool departments in addition to nappers and new knitting equipment.

Firestone Textiles, Gastonia, N. C., has ordered seven Model B1 return air condensers and nine Model C1 return air condensers for its opening room from Whitin Machine Works.

Gaffney Mfg. Co., Gaffney, S. C., is completing the installation of 30 Whitin Superflex spinning frames that have 300 spindles, 3½-in. gauge, 9-in. traverse, and 2-in. rings.

OPERATOR, AT LEFT, IS WATCHING MACHINE DRAW-IN COTTON WARP FROM A FLAT SHEET. HELPER, AT RIGHT, IS UNLOADING DRAWN-IN WARP FROM AUXILIARY TRUCK

A MACHINE WITH SHARP EYES, QUICK HANDS, AND AN AUTOMATIC "BRAIN"...

If you want to see the complete list of mills now using these machines, and the types of products they weave, write for a copy of the "Users List" shown above. Ask for *Bulletin F 6354*. It is available also in French and German translations.

The operation of drawing-in new warp through drop wires, heddles, and reed is an ever-present problem in all types of weaving. In the old days it was done entirely by hand, and still is in some places — a tedious and tiresome task. The advent of the Barber-Colman Warp Drawing Machines has changed all that, so that you now have a wide range of equipment to suit all needs. Barber-Colman Warp Drawing Machines draw-in the drop wires, the heddles, and the reed *all in one operation*. A needle, making as many as 220 strokes a minute, picks up each end in sequence and draws it through the proper apertures. Each opening is correctly presented at each stroke of the needle, this selection being accomplished automatically from a metal pattern strip punched in accordance with the designer's draft. Thus the human eyes, hands, and brain have been supplanted by a mechanism that is sharper of vision, quicker of movement, and practically infallible. Results, in mills across the country, and in lands across the sea, show a consistent record of improvements and economies of many kinds. Application is *not* limited to only the larger mills; it is determined actually by the work to be done. *Barber-Colman representatives are qualified by long experience to make a detailed study of your requirements — and to make a proper recommendation if one is justified.* Ask *your* Barber-Colman representative for details.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

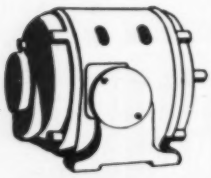
BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. | GREENVILLE, S. C., U.S.A. | MANCHESTER, ENGLAND | MUNICH, GERMANY

INDIA	MEXICO	BRAZIL	JAPAN	PAKISTAN	PAKISTAN
Batliboi & Company Forbes Street, Fort Bombay, India	J. Rabasa Isabel la Catolica 45-913 Apartado 7348 Mexico D.F., Mexico	Quimansl S.A. Anilinas e Representacoes Rua Glicerio 537, 547 Caixa 5658 e 3431 Sao Paulo, Brazil	Do-Yei Shoji Kabushiki Kaisha No. 7 Awajimchi 1-Chome Higashi-ku Osaka, Japan	Associated Agencies (M'cr.) Ltd. Piccadilly House 11 Piccadilly Manchester 1, England	Associated Agencies (M'cr.) Ltd. 27 Kothari Building Napier Road Karachi 2, Pakistan

New Oakite Safety Solvent Cleans without Water



Wherever water-base detergents or water rinses present a serious rust problem try Oakite Composition No. 116. It's a completely safe (flash point 234 deg. F. C.O.C.) cold-cleaning material that requires no rinse. When brushed or sprayed on surfaces and allowed to penetrate for a few minutes, its powerful emulsifying action quickly dissolves grease, oil and other soils. A quick application of pressure air removes all traces of the loosened dirt and grime. For further details, write Oakite Products, Inc., 42 Rector St., N. Y. 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS · METHODS · SERVICE
SCIENCE

Technical Service Representatives in Principal Cities of U. S. and Canada

Balance?
Yeah Man!
EPI Plastic Bobbins* are running smoothly, even at 15,000 RPM. That's because they are machined on the most sensitive precision equipment and because every EPI Bobbin is dynamically balanced.
*U. S. Patent 2,625,343
New England Representative:
J. H. Windle, Jr., 231 S. Main Street
Providence, R. I.
ENGINEERED Plastics
INCORPORATED
Gibsonville, North Carolina

NEWS ABOUT MILLS Continued

Globe Woven Belting Co., Buffalo, N. Y., has started a $100,000 expansion program. A two-story, 160x52-ft. building for manufacturing and storage area is being built.

Highland Park Mfg. Co., Charlotte, N. C., is converting its No. 1 plant to a combed-yarn mill. The company has purchased 12 Whitin Model J combers and complementary equipment for the conversion and is adding 12 Whitin Superflex spinning frames.

Jefferson Mills Inc., Mill #2, Crawford, Ga., has ordered 24 deliveries of Whitin Even-Draft drawing frames.

Judson Mills, Greenville, S. C., is installing nine Whitin Model J combers and accessory sliver lap and ribbon lap machines.

Kendall Co., Walpole, Mass., has purchased the Julia Cade Plant in Albertville, Ala. Julia Cade will be operated as part of Kendall's Cotton Mills Div.

James Lees & Sons Co., Bridgeport, Pa., has awarded the contract for a new rug factory in Los Angeles, Calif., to William P. Neil Co. The $250,000 plant will contain 60,000 sq. ft. The company will also build a new tufted-carpet mill near Clayton, Ga. Operations will be carried on under the name of Rabun Mills, Inc.

Monarch Mills, Ottary Plant, Union, S. C., has installed 64 Whitin Superflex spinning frames with 336 spindles, 3¼-in. gauge, 11-in. traverse, and 2-in. rings.

Mt. Vernon - Woodberry Mills, Inc., Baltimore, Md., has changed its name to Mt. Vernon Mills, Inc.

Opelika Mfg. Co., Opelika, Ala., has purchased new spinning frames from Whitin Machine Works.

Opp Cotton Mills, Inc., Opp, Ala., has ordered 64 deliveries of Whitin Even-Draft drawing frames.

Pepperell Mfg. Co., Pepperell, Ala., is installing two Model #56 Saco-Lowell combers.

Pilot Mills Co., Raleigh, N. C., is installing eight Saco-Lowell SG-1 spinning frames.

Postex Cotton Mills, Post, Texas, has ordered 33 Whitin Superflex spinning frames, 276 spindles each, 3¾-in. gauge.

Sherman Mfg. Co., Sherman, Texas, has ordered 32 Whitin Superflex spinning frames, 276 spindles each, 3¾-in. gauge.

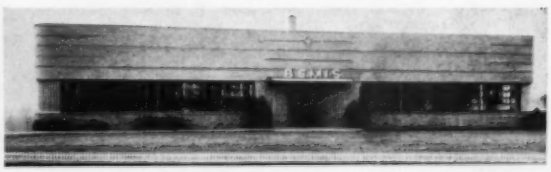
Shuford Mills, Hickory, N. C., has ordered 17 automatic weighing card feeds from W. D. Dodenhoff Co.

Trenton Cotton Mills, Gastonia, N. C., is spending $500,000 on the modernization of its spinning operation. Plans call for the installation of 49 Whitin Superflex spinning frames that are equipped with Unitrol system and antifriction spindles and will be 3¾-in. gauge.

Valley Mills, Inc., Siluria, Ala., will install a Saco-Lowell Model SG-3C spinning frame. The installation will include 17 Gwaltney frames, 4½-in. gauge, 184 spindles each.

Virginia Mills, Swepsonville, N. C., has purchased six 12x6½-in. Whitin roving frames.

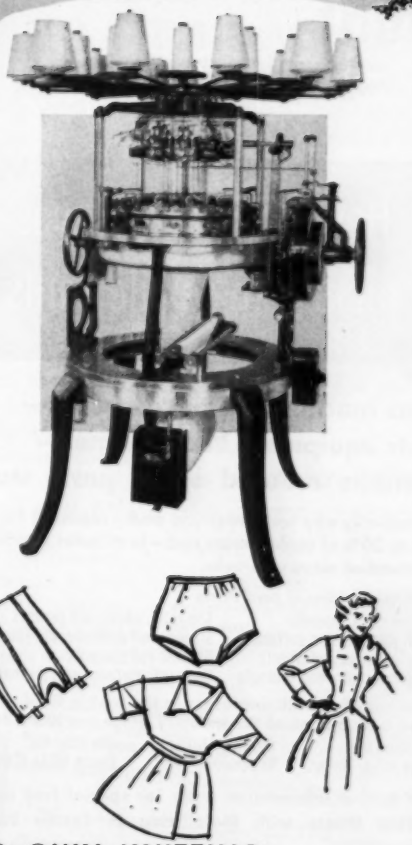
Wehadkee Yarn Mills, Talladega, Ala., is building a $90,000 addition.



BEMIS BRO. BAG CO. has started operations in this new 30,000-sq.-ft. plant in Flemington, N. J.

THE MARKET'S WIDE OPEN

for the Fabrics Produced on a WILDMAN REVOLVING FABRIC MACHINE



Textile men, aware of present demands of the apparel market, will recognize in these Wildman machines a source of immediate and lasting profit from both operating and merchandising standpoints.

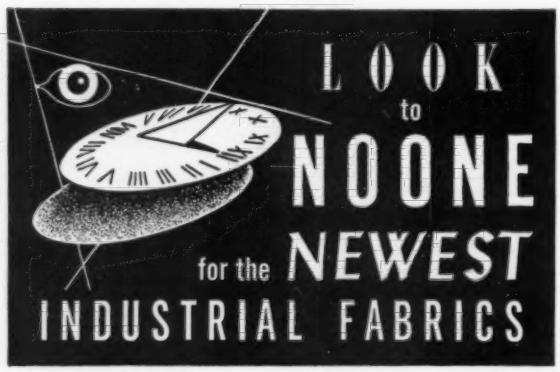
"With the greatest of ease" it turns out top-quality fabric for sportswear, underwear, beach wear, outerwear, dress, nightwear, foundations, stockinet, plushes, fleeces etc. Available in many styles for jersey, rib, interlock, for plain, tuck, welt stitches with or without automatic changes. Many sizes as large as 36″ with feeds to satisfy any customer's requirements. Write us today for complete information.

WILDMAN MFG. COMPANY, NORRISTOWN, PA.

WILDMAN

MAKES THE MACHINES THAT TEND TO THEIR OWN KNITTING

Manufacturers of: **FULL FASHIONED MACHINES; CIRCULAR MACHINES FOR OUTERWEAR, UNDERWEAR, SPORTSWEAR, TRIMMINGS; STOP MOTIONS**



✓ **SLASHER CLOTH** — well-cushioned body assures better slashing of yarn . . . greater resistance to abrasion. High tensile strength. New chemically treated cloth lasts longer . . . provides top quality warp dressing.

✓ **CLEARER CLOTH** — firm, dense nap; all wool or cotton back; highest quality—yet low in price.

✓ **LAPPING CLOTH** — newly developed cotton warp gives greater strength, less stretch; either all wool, or part synthetic filling.

✓ **PRESSURE ROLL FELT** — long service life . . . lasting resilient cushion. All wool. Supplied from stock, cut to required width.

✓ **OTHER SPECIALTY WOVEN FABRICS** — developed at your request.

NOONE INDUSTRIAL FABRIC DIV.
F. C. HUYCK & SONS
Peterborough, New Hampshire
The oldest manufacturer of woven industrial fabrics in America

KENWOOD TEXTILE PRODUCTS

How Metallizing saves money in textile mills

cuts machine repair costs 80%—
cuts equipment "down-time"—
permits reduced spare parts stocks

Practically any worn machine part—repaired for only 15 or 20% of replacement cost—in minutes and hours, instead of days or weeks.

Worn Equipment and Parts

Drive shaft journals	Top rolls, necks and centers
Roll journals and surfaces	Slasher roll surfaces and journals
Spindle tops and whorls	Blanket roll journals
Calender rolls and journals	Sand roll surfaces and journals

The list of metallizing users in the textile field reads like a Blue Book of the industry. Here are just a few:

Cannon Mills	Deering-Milliken	Bib Mfg. Co.
Dan River Mills	Greenwood Mills	Bruck Mills (Canada)

For further information write for special free bulletin "Whip Waste with Metallizing in Textile Plants."

METCO
Metallizing Engineering Co., Inc.
1159 Prospect Ave., Westbury, L. I., New York • cable: METCO
In Great Britain: Telephone: EDGEWOOD 4-1300
METALLIZING EQUIPMENT COMPANY, LTD.—Chobham near Woking, England

WOOLEN AND WORSTED MILLS

Burlington Industries, Peerless Div., Rossville, Ga., is building a new woolen mill in Cleveland, Tenn.

Forstmann Woolen Co., Passaic, N. J., has purchased the Gallet Knitting Mills, Inc., Uniontown, Pa. Present operations will continue.

Hampton Looms of Virginia Inc., Bedford, Va., has ordered four Whitin Model E woolen spinning frames and 60 spindles of Whitin-Schweiter automatic filling bobbin winders.

Hannah Pickett Mills, Rockingham, N. C., is converting some of its Whitin Super-Draft roving frames to American System Quik-Set long-draft roving.

Lebanon Woolen Mills, Lebanon, Tenn., has ordered new Model E wool spinning frames and a three-cylinder G-4 woolen card from Whitin Machine Works.

James Lees & Sons Co., Bridgeport, Pa., has closed its Worsted Yarn Div.

Pendleton Woolen Mills, Portland, Ore., expects to have the first unit of its new plant completed about July 1. The second unit is scheduled for completion in 1957 and a third unit for 1958. Upon completion, all units will contain about 188,000 sq. ft. The cost will be about $2,000,000.

Pondicherry Woolen Mills, Bridgton, Me., has been purchased by Charles W. Forrest, Bennington, Vt. Operations will be resumed for the manufacture of blankets, meltons, and other products. Dyeing and finishing operations will not be resumed.

Troy Blanket Mills, Troy, N. H., is building a 13,000-sq.-ft. addition to its jute felt department. Completion is expected this summer.

Wellman Combing Co., Johnsonville, S. C., has completed a $15,000 wool-storage warehouse.

Woonsocket Spinning Co., Woonsocket, R. I., and **Atlantic Wool Combing Co.**, Manville, R. I., are now solely owned by Gregory Shlomm. Mr. Shlomm has purchased the stock owned by Walter Bareiss.

SYNTHETICS MILLS

Clinton Silk Mill, Holyoke, Mass., is installing 22 new Crompton & Knowles looms. These looms will replace the older looms now in operation.

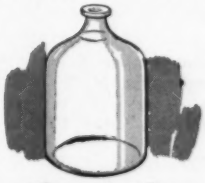
Hemmerich Corp. has taken over the operation of Duffy Silk Co., Buffalo, N. Y. Paul Hemmerich is president of the company.

UNION UNDERWEAR CO., New York, N. Y., has purchased this plant formerly operated by Profile Cotton Mills, Jacksonville, Ala. Operations will begin as soon as the mill can be made ready. This mill will make yarn to be used by Union's other plants.

You name it-MOYNO® pumps it!

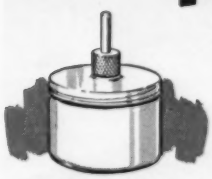
Foods

Potato salad, chow mein, peas, cream-style corn, tomatoes, molasses, chocolate.



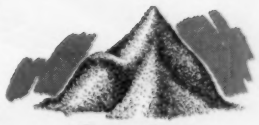
Chemicals

Caustics, acids, dyes, petroleum solvents, soaps, sludges, latex, synthetic resins.



Pastes

Paper coating, starch, seam paste, size, adhesive dope, heavy grease, graphite sludge.



Abrasives

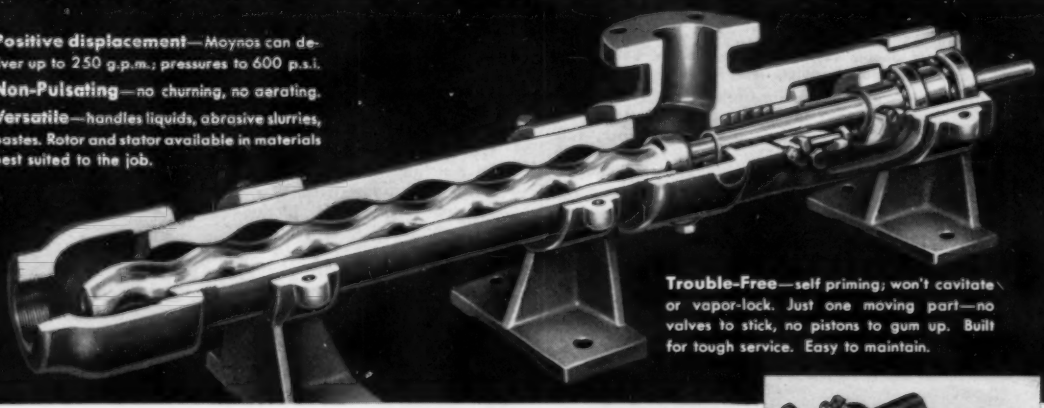
Insulator clay, frit, ground glass and water, porcelain glaze and enamel, cement, plaster.

FEATURES OF THE MOYNO THAT MAY SOLVE YOUR MATERIALS-HANDLING PROBLEM

Positive displacement—Moynos can deliver up to 250 g.p.m.; pressures to 600 p.s.i.

Non-Pulsating—no churning, no aerating.

Versatile—handles liquids, abrasive slurries, pastes. Rotor and stator available in materials best suited to the job.



Trouble-Free—self priming; won't cavitate or vapor-lock. Just one moving part—no valves to stick, no pistons to gum up. Built for tough service. Easy to maintain.

R & M Moynos handle almost anything that can pass through a pipe

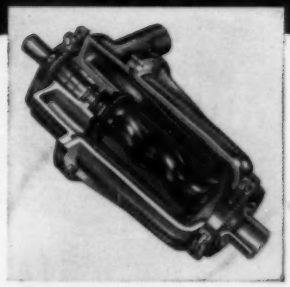
The Moyno is a problem-solving pump. And whether your problem is one of materials, maintenance or flow, there's a better-than-even chance that the Moyno is the pump you're looking for.

Here is a completely different kind of pump that handles almost anything that will push through a pipe, from free-flowing liquids to non-pourable pastes—even materials containing relatively large particles or abrasives.

This is how the Moyno works: a screw-like rotor turning within a double-threaded stator creates cavities which *progress* toward the discharge end of the pump, carrying the material being handled. The result is a smooth, steady flow, free from pulsation and turbulence.

The pumping elements of the Moyno are available in a wide range of materials, depending upon the substances to be pumped. From stainless steels and synthetic rubber to tool steels, bronze, plastics—there is a Moyno that will do the job you want, and do it with remarkable efficiency.

Industrial-type Moynos are available with capacities to 250 g.p.m.; pressures to 600 p.s.i. Small Moynos (see inset), used as original equipment, serve on washers, water pumps, sprayers, and many other products.



FREE...

this informative bulletin

Tell us your pumping problem—let's see how the Moyno can help solve it. If necessary, we'll be glad to run tests for you in our own laboratories. In any case, get the details on the Moyno—mail the coupon below.

R&M®

ROBBINS & MYERS, INC.

SPRINGFIELD, OHIO • BRANTFORD, ONTARIO

Fractional and Integral HP Motors

Desk, Window, and Household Fans

Hoists and Cranes

Moyno Pumps

Propellair Industrial Ventilating Equipment

Robbins & Myers, Inc.
Pump Division, Springfield, Ohio (TW)

Please send Bulletin 30C on Moyno Pumps

Name _____ Title _____

Company _____

Address _____

City _____ State _____

CUTTING PADS

Made of tough, "self-healing" TYGON plastic, COLONIAL Cutting Pads —

1. Reduce die wear and breakage,
2. Lessen rejects from double cutting due to "bounce back",
3. Increase production through quiet, less fatiguing operation.

Long wearing, dustless, and usable on both sides, COLONIAL Cutting Pads are widely used in machine, or hand cutting of rubber, leather, plastics, cork, candy, paper, fibre, felt cloth, foils, or light gauge metals.

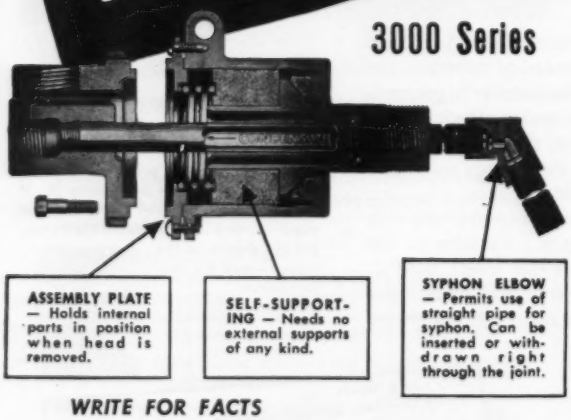
Colors are black and tan. Standard durometers are 87 to 97, others on special order. 8 standard sizes range from 20"x20" to 40"x40" in area, and from ¼" to 1" in thickness.

Write, today, for full information and prices! 203C-1

COLONIAL RUBBER CO.
RAVENNA, OHIO

Johnson Joint with SYPHON ELBOW

3000 Series



ASSEMBLY PLATE — Holds internal parts in position when head is removed.

SELF-SUPPORTING — Needs no external supports of any kind.

SYPHON ELBOW — Permits use of straight pipe for syphon. Can be inserted or withdrawn right through the joint.

WRITE FOR FACTS

on this Series 3000 Johnson Joint and the syphon elbow. Remember Johnson Joints have written an unmatched service record . . . are first choice among mill men and machinery makers alike . . . and can fit all operating needs.

The Johnson Corporation

814 Wood St., Three Rivers, Mich.

KNITTING MILLS

Binghamton Knitting Co., Binghamton, N. Y., has purchased the H O W Knitting Co., New Britain, Conn.

Dalnit, Inc., Dallas, N. C., is installing machines in its plant, formerly occupied by Morowebb Mill. The new company will make women's Orlon sweaters.

Flagg-Utica Corp., Florence, Ala., has purchased Faith Mills, Inc., Averill Park, N. Y. Production will continue under the name of Faith Mills. Arthur H. Butler has been elected president of Faith.

Forstman Woolen Co., Passaic, N. J., has purchased Gallet Knitting Mills, Uniontown, Pa. The mill's output will augment Forstman's production of men's and women's sweaters.

Kiddie Tot Hosiery Mill, High Point, N. C., has moved into its new 5,800-sq.-ft. addition. The addition will house the finishing and shipping department. The finishing capacity will be increased to 15,000 doz. pairs per week.

Kings Mountain Knitting Co., Kings Mountain, N. C., has started operations in its new plant.

Nolde & Horst Co., Reading, Pa., has started operations in its new Pittsboro, N. C., plant. The knitting and looping operations will be handled here, and finishing will be done in Burlington. The cost was $165,000.

Stedman Mfg. Co., Asheboro, N. C., has opened a new warehousing operation in Salt Lake City, Utah.

Strutwear, Inc., Clarksdale, Miss., has installed a sweater-knitting operation in its plant in addition to the hosiery and nylon-tricot knitting operations.

DYEING AND FINISHING MILLS

American Dyeing Corp., Rockville, Conn., is installing machinery in its new plant. Production is expected to begin this summer.

American Finishing Co., Memphis, Tenn., is building a new warehouse.

Botany Finishing Co., Passaic, N. J., has been organized as a commission wool dyeing and finishing plant. The company is located in the former Botany Mills plant. Richard G. Stoehr is vice president and general manager.

Cranston Print Works, Fletcher, N. C., is building an addition to its plant. Cost is estimated at $100,000.

Crest Textile Processing Corp., has started operations in the former Yale Piece Dyeing & Finishing Co., Paterson, N. J. Vincent J. Tancredi is president and Sam Cammarano is treasurer.

North Carolina Finishing Co., Salisbury, N. C., and Erlanger Mills Corp., Lexington, N. C., have merged under the name of North Carolina Finishing Co. There will be no change in directors, officers, or management.

Oxford Textile Finishing Co., Oxford, N. J., has completed a modernization program. A new Procter roller curer has been installed.

Poughkeepsie Piece Dye Works, Paterson, N. J., will consolidate its operations in the plant that it purchased a year ago. All the jig equipment will be moved from the Railway Ave. plant.

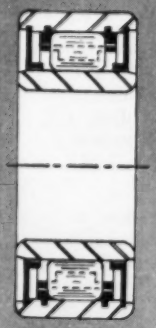
Putnam Finishing Co., Putnam, Conn., will resume operations in 75,000 sq. ft. of the former Putnam Mills. The Putnam building, damaged in last summer's floods, is being completely reconditioned.

Union Bleachery, Greenville, S. C., will install a materials-handling system in one of its warehouses.

How Rollway Bearing *Adaptability* Can Cut Your Costs

Rollway's Adaptability Solves Sealing Problem

Question was raised on textile machine bearing installation: "Can oil seal be incorporated *without increasing bearing width?*"



Solution: Standard narrower retainer with rollers of sufficient load capacity substituted — providing space for inner and outer oil seals. Standard width outer race readily machined for snap ring and sealing ring grooves.

Lint. Load. Over-load. Torque. Temperature. Space. Speed. You name the textile bearing requirement; Rollway can meet it.

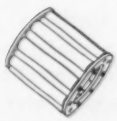
In fact, there's almost no limit to the number of factors Rollway Bearings are now adapted to — or can be adapted to.

Using adaptations of sizes and types, Rollway engineers can often design bearings for out-of-the-ordinary applications. And, since all components involved are standard production items, such installation can be made at little or no extra cost.

Rollway engineers will be glad to help you in your efforts to lower your bearing costs. *Isn't it worth a try?* No charge, no obligation — simply write, phone or send prints. Rollway Bearing Co., Inc., 557 Seymour St., Syracuse 4, New York.

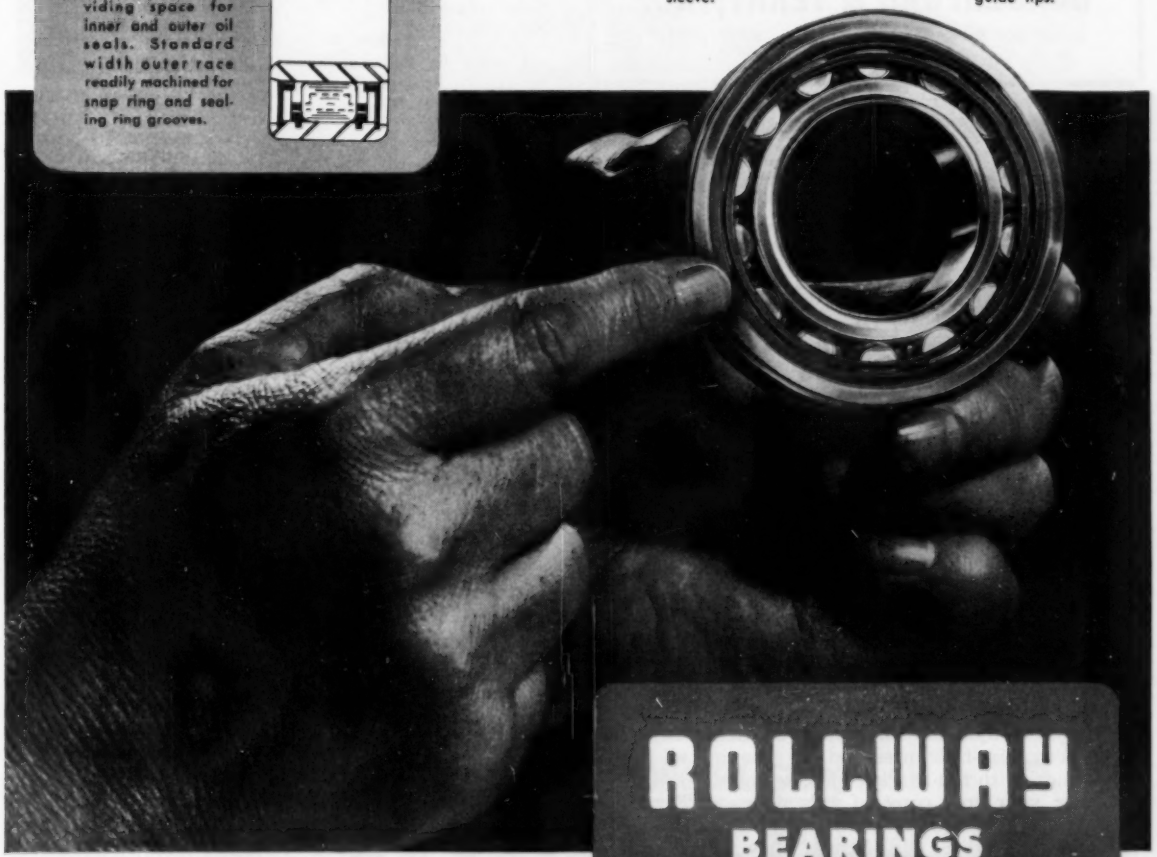
Steel cage, metric series—solid races.

Steel cage, inch series — planished sleeve.



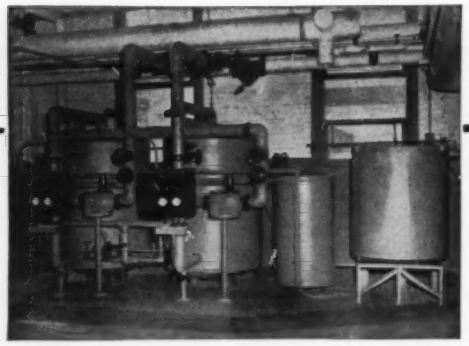
Steel cage, inch series — no races.

Steel cage, heavy duty — contoured guide lips.



ROLLWAY
BEARINGS
COMPLETE LINE OF RADIAL AND THRUST CYLINDRICAL ROLLER BEARINGS

SALES OFFICES: Syracuse • Boston • Chicago
Detroit • Toronto • Pittsburgh • Cleveland
Milwaukee • Seattle • Houston • Philadelphia
• Los Angeles • San Francisco



INVERSAND WATER SOFTENER PLANT

Producing

CLEAR-IRON FREE 100% SOFT WATER

Often For As Little As
1¢ per 1000 Gallons

Troubled with harshness, poor finish, uneven shades, redyes, seconds, and other product difficulties—?? The secret of uniformity may lie in your water supply. May we check it for you?

HUNGERFORD & TERRY, INC.

CLAYTON 9 NEW JERSEY

Write for Free Information on Johnson Textile Machinery Replacement Bearings

The ordering of maintenance material for textile machinery is simplified with this new Johnson folder which illustrates and describes a wide range of bearings for several leading makes of textile equipment.

You can order in confidence for Johnson Bearings are made to the exact specifications of the original equipment. The design of each bearing, its alloy, size-tolerances and oil grooving all are identical with the bearing to be replaced.

For your free copy of this Johnson Textile Bearing Folder JBL-9, write Johnson Bronze Company, 364 S. Mill Street, New Castle, Pa.

Johnson Textile Bearings

NEWS about MEN

William Allen has been promoted to superintendent of finishing at Massachusetts Mohair Plush Co., Lowell, Mass.

John G. Anderson has been named president and general manager of Circle-Bar Knitting Co., Kincardine, Ont.

William E. Ashley has been promoted to assistant superintendent of the cotton mill of Riegel Textile Corp., Ware Shoals, S. C.

Chester R. Bell has been named overseer of finishing, second shift, at Malden Spinning & Dyeing Co., Malden, Mass.

Edward G. Bilodeau has been promoted to overseer of dyeing, bleaching, and finishing at Bates Mfg. Co., Bates Div., Lewiston, Me.

L. E. Cain has been named overseer of carding at John B. Davidson Woolen Mills, Eaton Rapids, Mich.

E. L. Caviness has been named vice president of Borden Mfg. Co., Goldsboro, N. C.

John W. Clark has been elected president and treasurer of Randolph Mills, Inc., Concord, N. C.

Norman K. Coker has been named president, treasurer, and general superintendent of Paul Knitting Mills, Pulaski, Va.

Robert B. Colbert, Jr., has been elected a director and vice president of Wayne Knitting Mills, Inc., Fort Wayne, Ind.

Wade Costello has been named overseer of finishing at Wyandotte Worsted Co., Pittsfield, Mass.

Thomas Craig has been named overseer of carding at Greenville Mills Inc., Greenville, Miss.

FRANCIS E. GRIER has been elected president of the American Cotton Manufacturers Institute, Inc., Charlotte, N. C. Mr. Grier is president and treasurer of Abney Mills, president and treasurer of Toxaway Corp., both in Anderson, S. C., and chairman of the board of Erwin Mills, Durham, N. C.

Carl Dakin has been named assistant production manager at W. S. Libbey Co., Lewiston, Me.

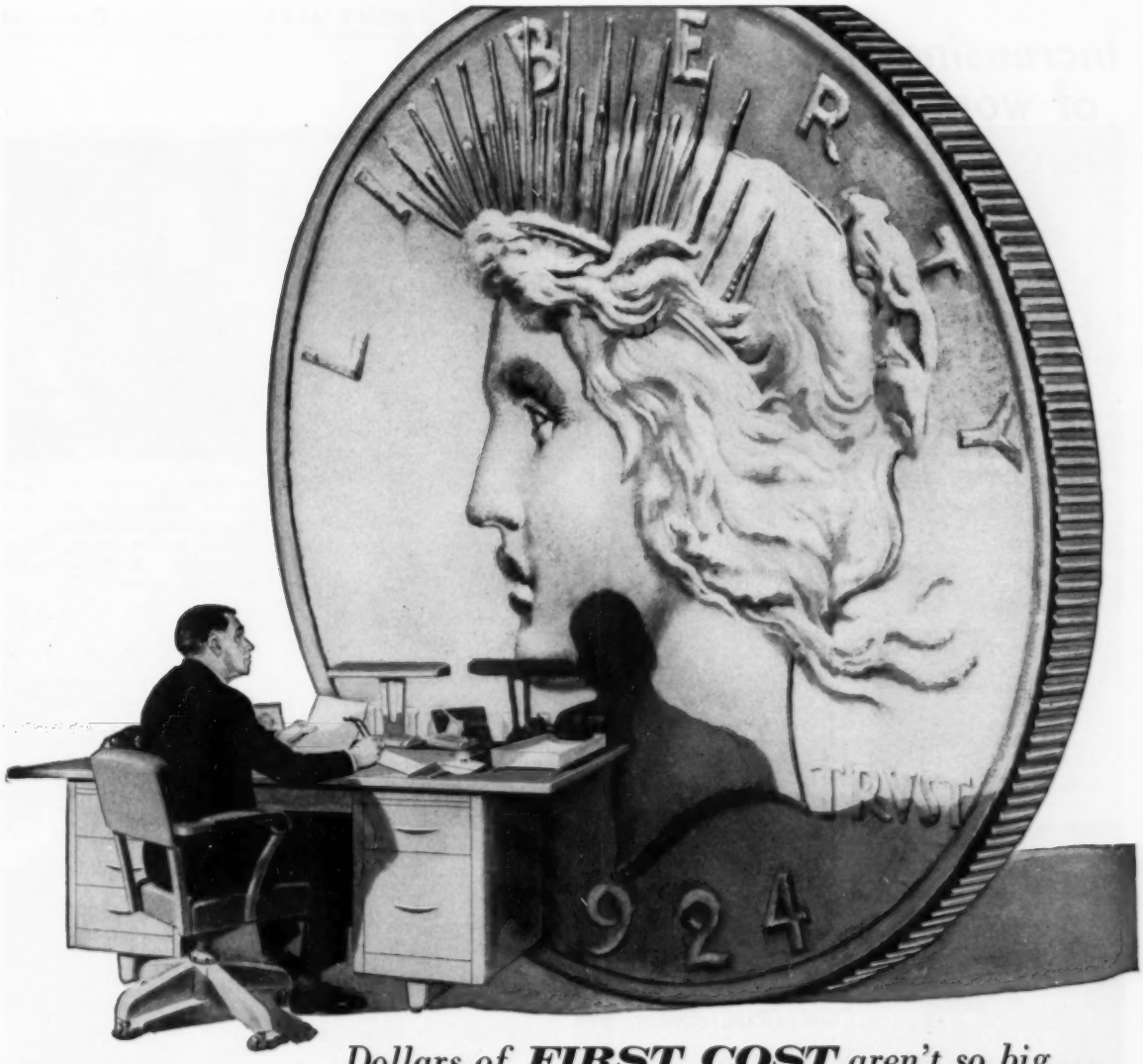
Sam Daniel has been named assistant to the vice president in charge of purchasing cotton and raw materials at Fieldcrest Mills, Inc., Spray, N. C.

Edward E. Dath has been named superintendent of Pacific Mills, Halifax, Va.

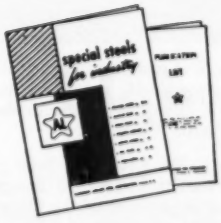
J. Denham has been named overseer of dyeing at Kenyon Piece Dye Works, Kenyon, R. I.

Frederick DeVaudreill has been named to head the weaving department at Amoskeag Mills, Inc., Manchester, N. H.

Donald S. Dow has been named assistant superintend-



Dollars of ***FIRST COST*** *aren't so big . . . if they're the* ***LAST COST***



WRITE TODAY
For These Publications

1. SPECIAL STEELS FOR INDUSTRY . . . 16 pages of essential data on the proper selection and application of principal AL special alloy products: stainless, tool and electrical steels and sintered carbides.

2. PUBLICATION LIST . . . a complete listing of all AL publications, both technical and nontechnical (over 100 in all), with a handy order form for your convenience.

ADDRESS DEPT. TW-78

First cost isn't everything! What really counts in most cases is not how much a thing costs when new, but how long it lasts; how *little* it actually costs when reckoned in terms of extra years of service.

That is where AL Stainless jumps to the head of the class. Stainless steel is a package of built-in advantages you just can't match anywhere else. No other commercial material is at once as hard, strong and lastingly beautiful — as resistant to heat, wear and corrosion — as easy and inexpensive to clean and maintain.

To top it off, AL Stainless is easy to fabricate, and we produce it in every shape or form a fabricator may require. Check up on its money-making possibilities for *you*, either in your products or your equipment, *and let us help!* ● ***Allegheny Ludlum Steel Corp., Oliver Bldg., Pittsburgh 22, Pa.***

W&D 5483 B

Make it BETTER-and LONGER LASTING-with

AL Stainless Steel

AL ALLEGHENY LUDLUM

Warehouse stocks carried by all Ryerson Steel plants

For more information, write direct or use Reader-Service post card.

Increasing the **SAFETY** *of workers in*
More than 4,000
Industrial and
Commercial companies
(including the largest;
list of users on request)

VISION *Screening* TESTS

that take *only 3 to 4 minutes*

44% fewer accidents are reported by plant managers, after installing these tests to make sure that each employee's eyes are working efficiently TOGETHER. Also—

20% reduction in spoilage . . . 14% increase in production.

These employers have found the **NO plant can afford workers with UNHAPPY EYES.** 30% to 40% of employees have visual problems.

KEYSTONE VIEW CO., Meadville, Pa. Originators of Binocular Vision Tests for Industry.

KEYSTONE VIEW CO., MEADVILLE, PA.

Send booklet telling WHAT PLANTS HAVE ACCOMPLISHED WITH VISION SCREENING.

(Name) .....

(Company) ..... (City) .....

The **Kuljian** *Corporation*

RAYON PLANTS & TEXTILE MILLS

- **DESIGN**
- **CONSTRUCTION**
- **MANAGEMENT**

1200 N. BROAD ST., PHILA. 21, PA.

MEXICO CITY • CARACAS • MADRID • ROME • ATHENS • TOKYO • CALCUTTA

Industrial Engineers

MODERNIZATION PROGRAMS
PLANT LAYOUTS
MANAGEMENT PROBLEMS
WORK LOAD STUDIES
COST REDUCTION REPORTS
COST SYSTEMS SPECIAL REPORTS

Specializing in Textiles for over 40 Years

RALPH E. LOPER CO.

GREENVILLE, S. C. Dial 2-3868

FALL RIVER, MASS. Dial OSborne 6-8261

ent at Yantic Woolen Mills, Yantic, Conn.

L. Frank Fayan has been named general superintendent and assistant to the president of Merrimack Mfg. Co., Lowell, Mass.

Dr. Daniel Frishman has been appointed director of research and development for Malden Mills, Inc., Malden, Mass.

John F. Fritton has been named plant manager of Cluett, Peabody & Co., Corinth, N. Y.

Gustav Gardner has been named superintendent at Yantic Woolen Mills, Yantic, Conn.

Spencer S. Garrity has been named manager of Landrum Mills, Bigelow-Sanford Carpet Co.'s new subsidiary now under construction at Landrum, S. C.

Frank Gilbert has been named assistant carder and blender at Amerotron Corp., Barnwell, S. C.

Walter J. Gladwin has been named superintendent of Ace Woolen Mills, Cleveland, Ohio.

Ernest Greer has been promoted to assistant night superintendent of the cotton mill of Riegel Textile Corp., Ware Shoals, S. C.

W. W. Harts, Jr., has been elected a vice president of Firth Carpet Co., Firthcliffe, N. Y.

Jack Harris has been named manager of the Kendall Co. plant at Pelzer, S. C.

George A. Hemphill has been promoted to overseer of the preparation department of the Hatch Mill, Columbus, N. C.

J. B. Hewitt has been named plant manager of Alabama Hosiery Mills, Decatur, Ala.

G. Ray Jeffcoat has been named assistant superintendent of Opp Cotton Mills, Inc., and Micolas Cotton Mills, Inc., Opp, Ala.

J. N. Jenkins has been named manager of the Addison, N. C., plant of Kendall, Co.

HENRY McD. TICHENOR has been elected president of the Cotton Manufacturers Association of Georgia, Monroe, Ga. Mr. Tichenor is president of Walton Cotton Mills Co., Monroe, Ga.

L. H. Jordan has been named manager of the Albertville, Ala., plant of Kendall Co.

Christopher Kelley has been named overseer of spinning at Worumbo Mfg. Co., Lisbon Falls, Me.

Haddon S. Kirk, Jr., has been promoted to a vice president of Chatham Mfg. Co., Elkin, N. C.

Michael F. Kopec has been named general manager of Schwarzenbach Huber Co., Textile Div., Luray, Va.

Noe Lachance has returned to the Sawyer, Regan Co., Dalton, Mass., as overseer of dressing.

S. Leach has been named manager of the Lynchburg, Va., division of Consolidated Textile Co., Inc.

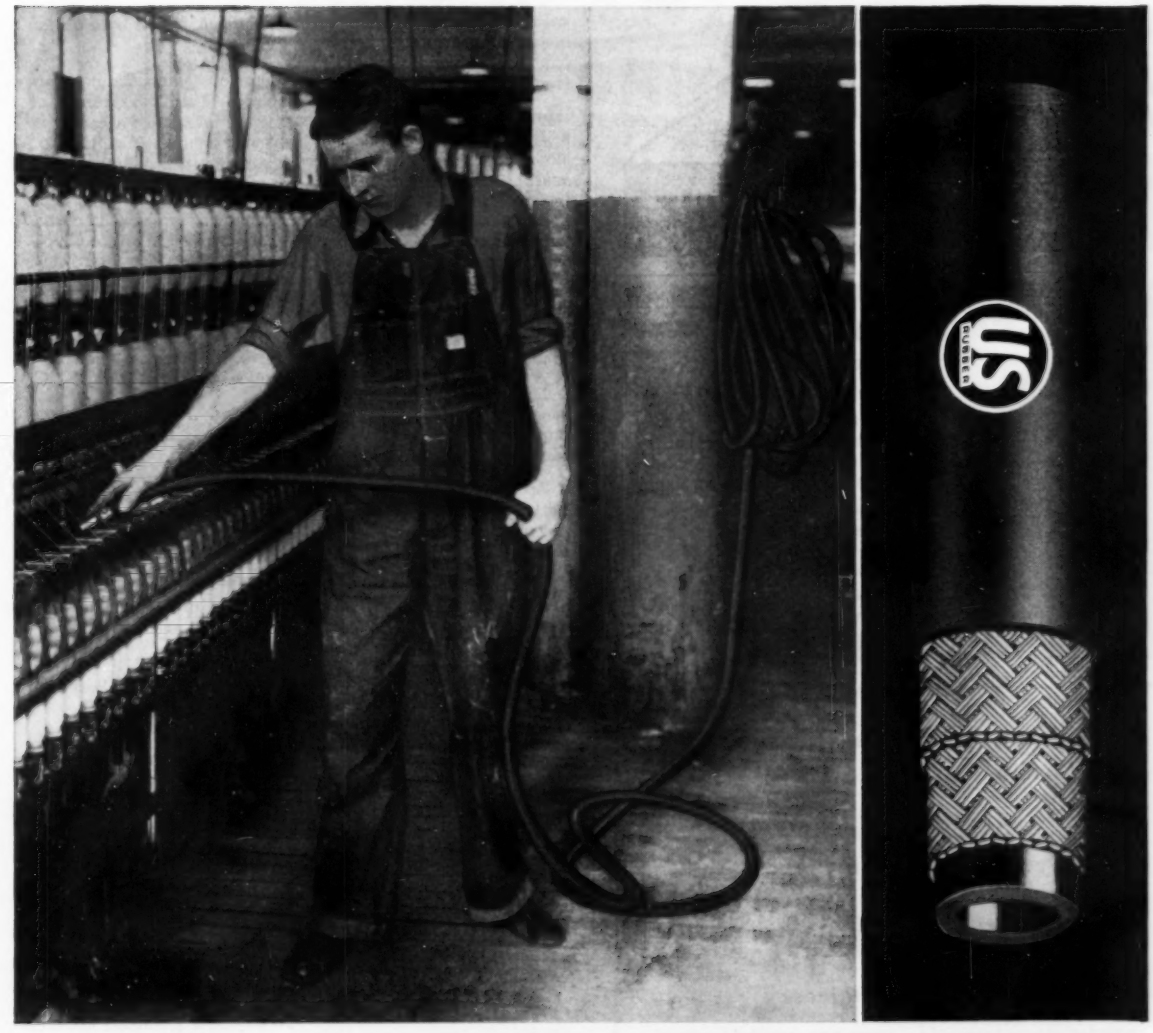
J. W. Lewis has been promoted to overseer of the carding department of the Calumet Plant of Callaway Mills, LaGrange, Ga.

Irving Luber has resigned as superintendent of Hendor Mills, Inc., Paterson, N. J.

Rinaldo A. Lukens has been named president of Continental Mills, Inc., Philadelphia, Pa.

E. A. Maddox has been promoted to superintendent in charge of production and operation at Lakeside Mills, Inc., Guntersville, Ala.

Trojan Air Hose



"high performance at low cost"

New U. S. Trojan Air Hose (P-471) has been developed to provide the textile industry with a high-performance hose at low cost. This new hose combines light weight and extreme flexibility with a truly rugged construction. This combination provides a general blow-down and clean-up hose that handles easily — won't twist or kink. Its smooth, green cover is abrasion resistant.

New U. S. Trojan Air Hose is available in continuous lengths, up to 500 feet, at any of the 28 convenient "U. S." District Sales Offices. Or contact us at Rockefeller Center, New York 20, N. Y.

Mechanical Goods Division

United States Rubber

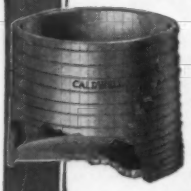
For more information, write direct or use Reader-Service post card.

STATIC!

You can eliminate costly static from warpers, slashers, cards, and other machinery. The SIMCO "Midget" guarantees to be the most effective, yet least expensive static eliminator! Write for information.

the SIMCO company
920 Walnut Street, Lansdale, Pa.

CALDWELL TANKS—
First Choice of the Textile Industry!



Caldwell offers the industry a complete tank service, including solid Stainless and Stainless-lined wood tanks and tubs, of any shape or size.

If you're thinking of installing or replacing a tank, let our 60 years' experience in building high-grade tanks serve you. *Send for our catalog, today!*

W. E. CALDWELL CO., Inc.
2060 Brook St., Louisville, Ky.

Caldwell TANKS AND TOWERS

VALUATIONS

ENGINEERING APPRAISALS
For All Valuation Purposes

CHAS. T. MAIN, INC.

Consulting Engineers

BOSTON, MASSACHUSETTS CHARLOTTE, NORTH CAROLINA

G. S. HAND TACHOMETERS and SPEED INDICATORS
for
MAXIMUM PRODUCTION

IDEAL FOR MOTORS - SHAFTS - SPINDLES - LOOMS - TURBINES - FOR TEXTILE AND POWER PLANTS.

1% Accuracy for any range from 30 to 100,000 RPM or surface speed. Antimagnetic durable mechanism. Efficient repair service at moderate charges.

WRITE FOR ILLUSTRATED FOLDER

GEORGE SCHERR CO., Inc.
200-F LAFAYETTE STREET • NEW YORK 12, N.Y.

NEWS ABOUT MEN Continued

Lee Margetts has been promoted to general manager of Hudson Hosiery Co. Ltd., Hudson, Que.

Joseph Marks has been named to head seamless knitting and looping operations at Berkshire Knitting Mills, Reading, Pa. **Justin Harris** has been named to head seamless training, and **James Brossman** will head the seamless machinists.

John L. Marselis has been named superintendent of Amoskeag-Lawrence Mills, Manchester, N. H.

James Marshall has been named superintendent of Worumbo Mfg. Co., Lisbon Falls, Me.

Ezra A. McEwen has been elected a director and assistant general manager of Wyandotte Worsted Co., Waterville, Me.

Herman B. Medlock has been named overseer of weaving for the cotton mill of Riegel Textile Corp., Ware Shoals, S. C.

T. B. Nilsen has been elected president and treasurer of Clinton Woolen Mfg. Co., Clinton, Mich.

Robert M. Noblett has been elected a vice president of Oneita Knitting Mills, Utica, N. Y.

Lester Oppenheimer has been elected vice president in charge of manufacturing at Puritan Looms, Inc., Philadelphia, Pa.

J. E. O'Sullivan has been elected vice president and treasurer of Indian Head Mills, Inc., Cordova, Ala.

Al Otto has been named general manager of Carleton Woolen Mills, Inc., Winthrop, Me.

Adolph J. Patrick has been appointed assistant superintendent of dyeing, bleaching, and finishing at Bates Mfg. Co., Bates Div., Lewiston, Me.

J. T. Pellerin has been named overseer of finishing at Kennebec Mills, Fairfield, Me.

Elwyn G. Preston, Jr., has been named vice president of West Point Mfg. Co., West Point, Ga. He will make his office in Boston, Mass. **Frank A. Norman, Jr.,** has been named treasurer.

Francis Quinn has been appointed assistant director of engineering and research at Bigelow-Sanford Carpet Co., Thompsonville, Conn.

Bernard J. Rahilly has been elected vice president in charge of industrial relations at Chicopee Mfg. Co., New Brunswick, N. J.

Dan M. Richardson has been named supervisor of seaming operations at Belvedere Hosiery Co., Charlotte, N. C.

Buford Robbins has been appointed superintendent of Chronicle Mills, Belmont, N. J.

David Rubin has been named president of Somerset Knitting Mills, Philadelphia, Pa.

J. H. Rutledge has been elected secretary-treasurer of China Grove Cotton Mills Co., Kannapolis, N. C.

John Scala has joined Nu-Dye & Finishing Co., Paterson, N. J., as a finisher.

W. P. Schofield has been named superintendent of Fox River Valley Knitting Mills, Appleton, Wis.

Russell Shafer has been named to head quality control at Pachaug Mills, Inc., Norwich, Conn.

G. G. Simons has been elected treasurer and a director of Drayton Mills, Spartanburg, S. C.

Matthew J. Sinnott has been elected a vice president of Spartan Mills, Inc., Spartanburg, S. C.

A. Glenn Smith has been named manager of seamless hosiery production at Melrose Hosiery Mills, Inc., High Point, N. C.

James P. Smith has been named superintendent of Arms Textile Mfg. Co., Manchester, N. H.

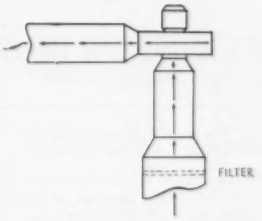
Earle R. Stall, Jr., has been promoted to plant manager at American Spinning Co., Greenville, S. C.

Gordon L. Synan has been named president of Hampton Looms of Virginia, Inc., Bedford, Va.

4 WAYS TO "CONDITION" YOUR PLANT AIR WITH "BUFFALO" UNITS

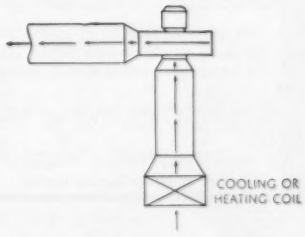
1. AIR MOVEMENT

Air movement may be all the "air conditioning" you need. It cools, carries off excessive moisture, fumes, dust and stale air. "Buffalo" Type BL Limit-Load Ventilating Fans, Axial Flow Fans and Heavy Duty Propeller Fans are creating favorable air conditions in many entire plants by: (a) blowing in fresh filtered air as in the diagram at right, or (b) exhausting undesirable air outside or into recovery units. Write for Bulletins F-100, 3533-EF and FM-1234.



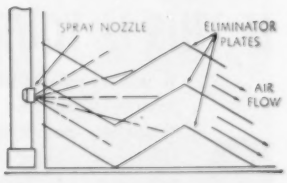
2. COOLING OR HEATING

For more temperature control than simple air circulation affords, air is cooled or heated by drawing it thru extended surface coils, then distributed by fan and duct, as shown at right. "Buffalo" ECC Evaporative Condensers are also widely used in refrigeration systems for their compact size, efficient performance and freedom from troubles. For heating and ventilating, "Buffalo" Unit heaters combine "Buffalo" Fans with heating coils, plus filter boxes, if desired.



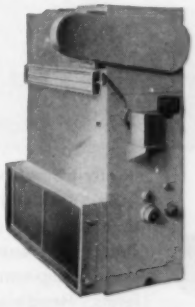
3. AIR WASHING

Air washing provides a higher degree of cleaning than simple filtering. It also cools and humidifies. "Buffalo" Air Washers were among the first used by industry over fifty years ago, and are today almost a standard for reliability. Sketch at right shows how air passes thru banks of sprays and wetted eliminator plates, on which dust impinges and is collected in a tank under the unit. Write for Bulletin 3142-E.



4. COMBINATIONS OF ALL THREE

"Buffalo" PC Air Conditioning Cabinets are compact units for providing any or all functions of air conditioning, automatically controlled, if desired. Sturdy all-over construction, "Buffalo" Fans and Pumps — the "Buffalo" "Q" Factor* — give you bonus performance in any "Buffalo" Fan or Air Conditioning Unit you buy. CALL IN YOUR NEARBY "BUFFALO" ENGINEERING REPRESENTATIVE for competent advice on any air problem you may have. He's a factory and field trained Graduate Engineer, and he's backed by our entire home plant staff with 79 years of air handling experience.



**The "Q" Factor — the built-in Quality which provides trouble-free satisfaction and long life.*

BUFFALO FORGE COMPANY
184 MORTIMER ST. BUFFALO, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING FORCED DRAFT COOLING HEATING PRESSURE BLOWING

COOL any building from the ROOF

effectively, efficiently, economically

Everyone knows how the sun, beating down on the roof of a building, descends into the interior. Even with insulation, this imposes a big load on air conditioning.

Roof cooling is the answer. It can be used on any roof to keep the building cooler and save air conditioning costs. Best equipment for the job is Ruppright's Rotary Roof Cooler. Easily installed within a few hours by your maintenance department, it produces a thin film of water on the roof. This film evaporates but is continuously renewed by the slowly-rotating cooler making the roof cooler than the air.

RUPPRIGHT'S ROTARY ROOF COOLER

Box 6795-TW, Los Angeles 22, Cal.

WRITE FOR FREE FOLDERS

elty Yarns

Any construction to your specifications using any fiber for Men's Wear, Dress Goods, Upholstery, Draperies, Automotive, and so on. Twists, Boucles, Ratines, Knots, Nubs ——

Neva-Tarn

tallic Yarns

Non Tarnishing Metallics, all constructions of supported yarns on disposable tubes or cones for Knitting and Weaving into all types of fabrics. Additionally – Metallics combined with Novelties.

THE *ontgomery* COMPANY

EST. 1871 15 CANAL BANK WINDSOR LOCKS, CONN.

Phone: Windsor Locks, Conn. NAtional 3-3338

IF THIS IS YOUR PROBLEM

If you need effective, highly readable, smartly illustrated company literature (booklets, pamphlets, manuals) to display your products, inform the public of your operations, attract key personnel to your plant, train employees, and perform any of the other communicative functions that are vital to your business . . .

THIS IS YOUR ANSWER

The McGraw-Hill TECHNICAL WRITING SERVICE has a staff of more than 150 highly-trained writers, editors, and illustration specialists whose job it is to create technical and general literature for industry. We write, illustrate, design, and print Equipment Manuals, Product Bulletins, Handbooks, Company Histories, Annual Reports, and other specialized material. Save money and time. Let our staff be your staff for Technical and Business publications.

This service is available through ad agencies.

Write • Phone

TECHNICAL WRITING SERVICE

McGraw-Hill Book Co., Inc.

330 W. 42nd St., N. Y. 36, N. Y.

LOngacre 4-3000

NEWS ABOUT MEN Continued

R. J. K. Thompson has been named superintendent of Capital City Woolen Mills, Des Moines, Iowa.

Kurt Trueb has been named vice president in charge of weaving operations at the Schwarzenbach-Huber Co.

Harold E. Tysinger has been named supervisor and instructor at the Puerto Rican hosiery branch of M. K. M. Knitting Mills, Inc., Manchester, N. H.

Russell E. Welch has been elected treasurer of Adler Co., Cincinnati, Ohio.

Paul A. Whetstone has resigned as superintendent of Durham Hosiery Mills, Durham, N. C.

Herbert Whitehouse has been named superintendent of the grey mill at Amerotron Corp., Barnwell, S. C.

Thomas Wilson has been named superintendent of weaving at Slingsby Mfg. Co., Brantford, Ont.

James Young has been named overseer of dyeing at Eureka Printing Co., Clifton, N. J.

Norman Young has been appointed assistant superintendent of the bleachery at Fieldcrest Mills, Inc., Spray, N. C.

OBITUARY

John M. Berry, 83, founder and president of Rome Hosiery Mills, Rome, Ga.

Bertram H. Borden, 87, chairman of the board of Bor den Mills, Inc., Kingsport, Tenn.

Chaiborn M. Carr, 71, retired vice president of American Enka Corp., Asheville, N. C.

William F. Carr, 75, secretary of Durham Hosiery Mills, Durham, N. C.

Olin L. Craig, 65, outside superintendent and cotton classer at Norris Cotton Mills Co., Cateechee, S. C.

Harry E. Frisch, 67, founder and president of Frisch Knitting Mills Co., Cleveland, Ohio.

W. M. Hagood, 67, a director of Pickens Mill, Pickens, S. C.

Earl S. Jenckes, 83, chairman of the board of Fairy Silk Mills, Shillington, Pa.

George E. McClellan, 57, director of the nylon-manufacturing division of the Textile Fibers Dept. of E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Grover D. Moore, 70, retired president of Grace Hosiery Mills and Tower Hosiery Mills, both in Burlington, N. C.

Hugh A. Morson, 74, retired manager of Leaksville Woolen Mills, Charlotte, N. C.

J. Charles Nice, former owner and president of Nice Yarn Co., Wakefield, R. I.

John J. O'Day, 67, president of O'Day Textile Mills, Inc., Fort Plain, N. Y.

Hermon R. Rice, 70, executive vice president of Springs Cotton Mills, Lancaster, S. C.

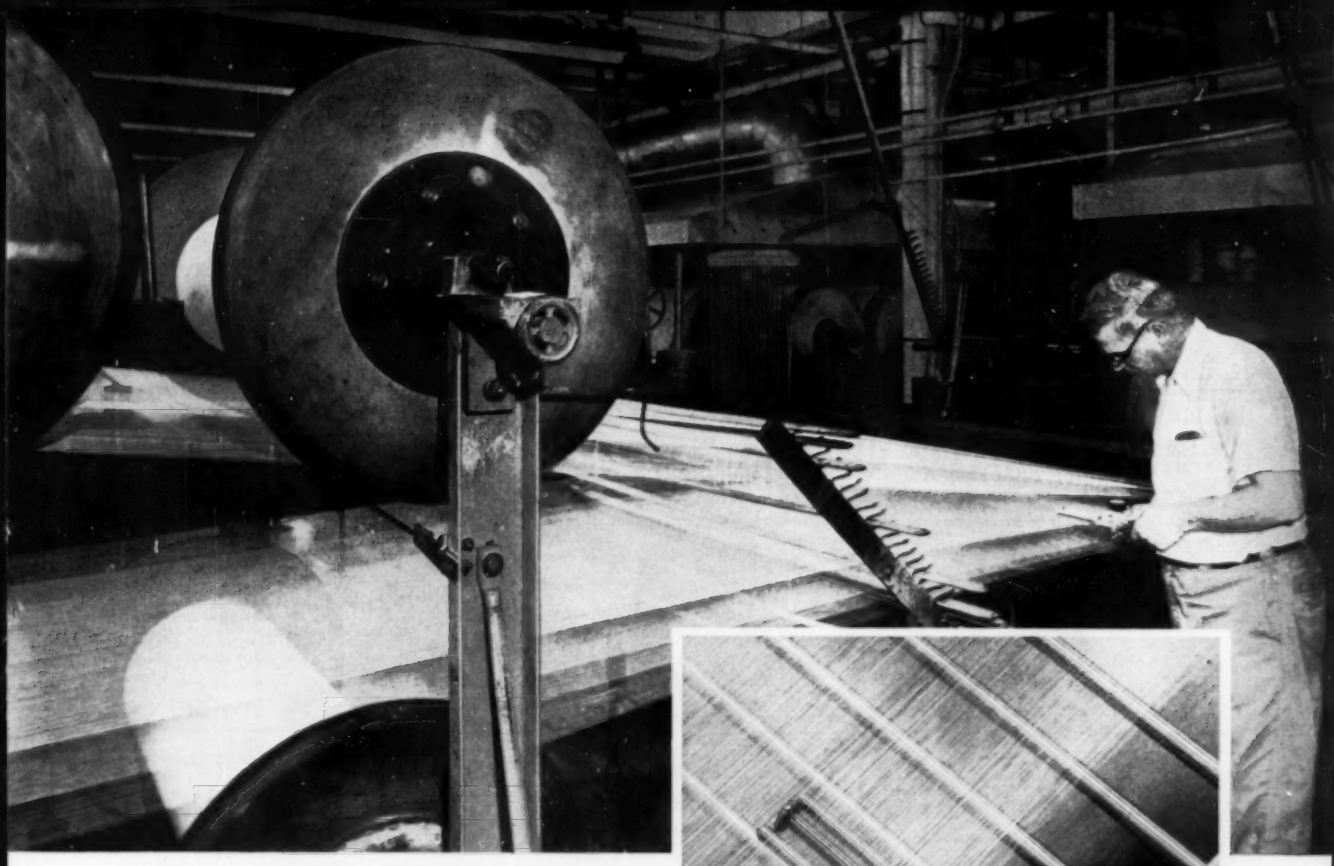
William Robinson, 88, chairman of the board of Robinson Cotton Mills Ltd., Toronto, Ont.

Roy H. Thurmond, Sr., 65, treasurer of Jordan Mills, Inc., Columbus, Ga.

Amos C. Tift, 65, vice president of Piedmont Cotton Mills, East Point, Ga.

Harry Wilkinson, 74, retired cloth superintendent of the former Ayer Mills, Lawence, Mass.

Fred Zier, 64, president of Zier Knitwear Corp., Brooklyn, N. Y.



NEW KIDDE SLASHER TENSOMETER ends uneven yarn sheet tension in cotton system slashing

The new KIDDE Slasher Tensometer prevents a principal cause of streaky fabric in weaving mills that slash their yarn on the cotton system. No matter how many creel beams you use to make up your warp, you can now be sure that the tension in all yarn sheets is the same. With the KIDDE Slasher Tensometer it is easy to compare the tensions in the yarn sheets making up the sley and adjust the beam let-offs to even out any differences. It eliminates the all too fallible human element in estimating tensions from different beams in the same set.

Developed in cooperation with the Textile Research Laboratory of American Viscose Corporation, the KIDDE Slasher Tensometer will provide quality insurance in any slasher room. For prices and complete information, write today to: Dept. STA1

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS
BEAMERS • CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS

Kidde

MANUFACTURING CO., INC. — 42 FARRAND STREET — BLOOMFIELD, NEW JERSEY

SOUTHERN OFFICE — 267 W. MAIN ST., GASTONIA, N. C.

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

WHEN YOU NEED THEM

JUNIOR DRAFTSMAN

SECRETARY

JUNIOR ACCOUNTANT

CASHIER

SALES REPRESENTATIVE

ENGINEER

ELECTRICIAN

JUNIOR BUYER

MACHINIST

...WILL THEY BE READY?

What kind of seniors will you hire this year from the high schools around you? Fast learners, steady workers, or...? Good schools are vital. And good schools *don't just happen*. If your company can help community groups to get better schools (population growth alone demands an extra 200,000 classrooms and 165,000 more teachers *right now*), the schools are sure to help your company. Think about it, won't you?

PUBLIC SERVICE ADVERTISING COUNCIL

Want to find out how to help in *your* community?
Get specific information by writing:
Better Schools, 9 East 40th Street, New York, N. Y.

EMPLOYMENT OPPORTUNITIES

The Advertisements in this section include all employment opportunities — executive, management, technical, selling, office, skilled, manual, etc.

Positions Vacant
Positions Wanted
Part Time Work

Civil Service Opportunities
Selling Opportunities Wanted
Selling Opportunities Offered

Employment Agencies
Employment Services
Labor Bureaus

DISPLAYED —RATES— **UNDISPLAYED**

The advertising rate is $17.00 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

An advertising inch is measured ⅞" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

$1.50 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.
Position Wanted—½ the above rate.
Box Numbers—counts as 1 line.
Discount of 10% if full payment is made in advance for 4 consecutive insertions.
Not subject to Agency Commission.

Send NEW ADS or inquiries to Classified Advertising Division TEXTILE WORLD, P. O. Box 12, N. Y. 36, N. Y.

EXCEPTIONAL POSITION AVAILABLE

(SALARY OPEN)

We can offer unusual opportunity to experienced textile chemical engineer who is completely familiar with the manufacture of sizings and various specialty chemicals to the textile trade. We are a successful well rated specialty chemical company in the South, but not in the textile specialty field as yet, so all replies will be strictly confidential. Give full particulars as to age, experience, marital status, education, present income. Must be willing to relocate. Send personal photo. Include home phone number. Write . . .

P-1730, Textile World
330 W. 42 St., New York 36, N. Y.

ASSISTANT WEAVING SUPERINTENDENT

Required for large progressive Rayon Weaving Mill. Applicants, preferably between the ages of 35-45, must be thoroughly experienced in the Warping, Sizing and Weaving of all types of Synthetic Filament yarns and should have a good knowledge of fabric construction.

Excellent working conditions and opportunity for first class man.

Salary according to qualifications and experience. Group Insurance and Pension Plan in operation.

Reply in strict confidence giving full particulars to

P 1253 Textile World
330 W. 42 St. New York 36, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)
LOS ANGELES: 1125 W. 6th St. (17)

POSITION VACANT

Knitting Filer Wanted fixer wanted for Lieberknecht knitting machines. Good future for reliable ambitious man. Replies held in confidence. P-1798, Textile World.

SELLING OPPORTUNITY OFFERED

Wanted Manufacturer's Agent to represent old established company selling card clothing and an accepted fabric condenser tape in New England. RW-1243, Textile World.

SELLING OPPORTUNITY WANTED

Reputable and experienced executive in the textile and lingerie fields seeks Representation. Only leading firms willing to collaborate will be considered. Write offers to cypher L 6901 Q to Publicitas in Zurich/Switzerland.

Long experience Community and Public Relations; Employee welfare, services and counselling; Industrial and Community recreation; Administration of Boys Club and Country Club; Adviser to Health and Welfare Agencies; Administration Suggestion Plan. Desire position with Textile Company in South. Can furnish best references.

PW-1870, Textile World
330 W. 42 St., New York 36, N. Y.

SUPERINTENDENT
Assistant Superintendent

Woolen, worsted, synthetics. Weaving and complete manufacturing. Excellent ability, administration and labor relations. Will consider Domestic or Foreign position. Best of references.

PW-1791, Textile World
330 W. 42 St., New York 36, N. Y.

When Answering
BOX NUMBERS . . .

to expedite the handling of your correspondence and avoid confusion, please do not address a single reply to more than one individual box number. Be sure to address separate replies for each advertisement.

POSITIONS OPEN

WE CAN PLACE—Knitting mill mgrs., supts., asst. supts., overseers and fixers all depts.; supts. and overseers familiar with nubs and slugs.; wstd. yarn mill supts., asst. supts., overseers and second hands (U.S. and foreign); asst. supt. cot. mill; supt. tricot dye. and finish.; thread mfr. (foreign); pile fabric designer.

OVERSEERS FOR—cot.-rayon piece goods dye.; wool jersey dye.; pile fabric dye.; dyeing zipper tape; finish. knit. fabrics. Tex. school instructor card. and spinning.

MECHANICAL ENGINEERS; master mechanics, designers and draftsmen; chemist coated fabrics; salesmen; industrial-time study engineers; cost accountants; loom fixers.

SEND US YOUR RESUME. Many attractive positions at excellent salaries are open for top-notch men. No fee to be paid unless you accept employment through us. Negotiations are confidential.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St. Boston 8, Mass.
Phone: LIberty 2-6547
Over 55 Years In Business

MILL MANAGER WANTED

Colored yarn and 400 loom weaving mill making finished piece goods seeks thoroughly experienced manager-superintendent for full direction all phases of operation including maintenance, analysis and use of production and cost records. Salary open.

P-1788, Textile World
330 W. 42nd St., New York 36, N. Y.

WILL PURCHASE
TEXTILE CHEMICAL PLANT

We are interested in acquiring an operating textile chemical plant, manufacturing sizing, etc. We are not liquidators. In reply give full particulars as to business volume, number of plant & office personnel, production capacity, monthly expenses, physical plant layout, equipment, storage space, available transportation, financial obligation. Include photo of plant if available. Give day & night phone numbers. Your reply will be held in strict confidence. Write

P-1728, Textile World
330 W. 42 St., New York 36, N. Y.

VISCOSE RAYON

CHIEF ENGINEER

Graduate Mechanical Engineer with at least 10 years experience in Rayon Industry, preferably in staple, to take over-all charge of Engineering Department of smaller rayon plant. Scope of position covers maintenance, power, design and construction. Administrative ability required.

also . . .

DESIGN AND PROJECT ENGINEER

Graduate Mechanical Engineer, 3-5 years experience in Rayon or Chemical Industry, to be in charge of Design and Drafting Office in the Engineering Department of smaller rayon plant. Scope of work covers machinery—piping—and building—design, equipment layouts, engineering calculations and estimates.

Please send full resume and salary requirements to:

HARTFORD RAYON COMPANY
Division of Bigelow-Sanford Carpet Co.
Rocky Hill Connecticut

WANTED

EXPEDITER FOR
KNIT-GOODS CONVERTER

Thoroughly experienced man with ability to follow-up cloth orders from griege goods through shipment. Should be familiar with dyeing and finishing operations, scheduling, production controls and quality standards. Located Massachusetts. Salary open. Excellent opportunity.

P-1767, Textile World
330 West 42 St., New York 36, N. Y.

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

BUSINESS OPPORTUNITIES — EQUIPMENT - USED or RESALE

UNDISPLAYED RATE:

$1.50 a line, minimum 3 lines. To figure advance payment count 5 average words as a line.

PROPOSALS, $1.20 a line an insertion.

BOX NUMBERS count as one line additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED RATE:

The advertising rate is $14.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page.

EQUIPMENT WANTED or FOR SALE ADVERTISEMENTS acceptable only in Displayed Style.

Send New ADVERTISEMENTS or Inquiries to Classified Adv. Div. of Textile World, P. O. Box 12, N. Y. 36, N. Y. for July issue closing June 15th

LIQUIDATION SALE

1—SMITH DRUM 3 Arm Stainless Skein Dyeing Machine.
1—EXTRACTOR 30" Stainless Basket.
1—66" HUNTER SQUEEZER, 2—18" Rubber Rolls, Ball Bearing.
1—65" PNEUMATIC QUETCH, 2—9" Rubber Rolls, Ball Bearings.
24—DYE JIGGS, 50", 56", 60", 70" Widths, All Stainless Steel, Enclosed and Open.
7—ROPE SQUEEZERS, 24" x 18" diameter rubber rolls, stands.
1—PRINT MACHINE, 2 color, 60" wide.
1—TENTER FRAME, 40' x 60", Stainless Clips.
1—50" CALENDER, Hydraulic 80 Tons, 3 Rolls.
3—AGERS 50"-70" Widths, 18'-26' Lengths.
3—PADDERS, 50" Widths, 2 Rubber Rolls.
1—SINGER, 64" Wide, Double Burner.
1—SELVAGE MARKER, 64" Wide.

WE BUY COMPLETE MILLS TO SINGLE MACHINES

SOUTHERN OFFICE
IPA SOUTHERN, INC.
610 S. Carolina Nat. Bk. Bldg.
Greenville, South Carolina
Tel: 2-3561

IPA

NORTHERN OFFICE
INDUSTRIAL PRODUCTS OF AMERICA
140 Market St., Paterson, N. J.
Sherwood 2-6614 Cable: Texindus

PARTS AND SUPPLIES FOR YOUR MILL

15,000—Danco Canvas Loom Lug Straps, 14x1½", 16x1½", 8x2", 12x2", 13x2", 14x2", 15x2", All New
10,000—Rubberized Fabric Loom Lug Straps, 12x1½", 14x1½", 16x1½", 12x2", 13x2". All New
20,000—Loom Pick Gears & Wheels, E, K, D Looms L26100, L26400, LM2000, XD 56000, C. & K. Cheney
2,000—Pick Clocks, Reset & Non-reset, Veeder Root 2 & 3 shift, Durant 3 shift, complete with worms, rods, brackets. Also single shift & 2 shift Walthams
1,000—Stafford Cutters, #13, complete with Box Front recovered with new leather
1,000—Loom Temples, Dutcher, 25 types. Also Cutter Bar Knives, Springs, etc.
3,000—Stop Motion Sliding Bars, 53-⅞", plus other sizes. Also Electrodes, all lengths
20,000—Heddle Frames, single & double row, 10", 12", 13". Also parts and supplies
20,000,000—Drop Wires, for sliding bar, electric, Regan stop motions—closed and open types
100—Dobbies and Arches, C. & K., 16 & 20 Harness Dbl. Index, Single cylinder, complete
2,500—Box Fronts and Back for Draper E, K, D, XK, XD Looms, covered with new leather if desired

FROM ROYAL WEAVING & OTHER LIQUIDATIONS

1—120 Spindle Abbott Winder, 550V, cycle changer, Serial #380, #5 Butt Bobbin
160—Draper Model K Looms, 40", 42", 44" Cloth, Lacey Tops and Dobbies, motorized
2—Draper Model K Bobbin Strippers, motorized. 2—Model L. 2—Hoists
92—Draper Model D Looms, 42", 46" Cloth, Dobbies and Lacey Tops, motorized
86—Draper Model E Looms, 50", 48" Cloth, Brown Spinning Tops, motorized
1—Sipp Warper, EN, 1947, excellent 3—Cloth Inspecting Machines
5—BarberColman Portable Warp Tying Machines, LC, LL, LS—Hand & Motor Driven
2—Johnson Stashers—1 Reeves Drive, 23" cans, 1 9-Drum 30" S.S. cans

MACHINERY SALES CORPORATION
22 Elm St., P. O. Box 367
New Bedford, Mass. WYman 6-2271

PRICED TO SELL

200 pr. 24" Mossberg Steel Beam Flanges
150M—8-¾" A. L. Bobbins, (wool & worsted)
62 —Loom Motors, ½ HP, 60/3/550
1M—Jack Spools, 32½"-10" head
340 —Jack Spools, 40¼"-9" fiber head
700 —Rawhide Pickers, single
2M—Marquette Roller Bear. Spindles (new)
1500 —Herr Rings 4"-2-½ - 2-¾"
1M—Picker Sticks (New) for W-3
21 Spindles of Whitin Schweiter Winder.

—L. J.—
McCAFFREY
& SON, INC.
Box 495 *Phone Pawtucket 3-1314* Pawt, R. I.

IN STOCK

MARCO FLOW MASTER CONTINUOUS process with Homogenizer, Kombinator, Reactor, etc.

STAINLESS STEEL storage and mixing tanks, from 30 gal. to 10,500 gal.

Centrifuges and Centrifugals—Bird, De Laval, Sharples, Fletcher, Tolhurst, AT&M, etc.

PERRY EQUIPMENT CORP.
1430 N. Sixth St. Philadelphia 22, Pa.
ST 4-7210

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

BUSINESS OPPORTUNITIES

Available 10,000-square foot, steel masonry building, 6-inch concrete floor, on two main highways, in Central Texas area. Building can be enlarged to necessary requirements. Plenty native-white farm-bases labor. Responsible firm can make attractive deal. Write, wire or telephone 5-2251, Rising Star Chamber of Commerce, Rising Star, Texas.

Wanted to buy, est. 1 or 2 set woolen mill for ladies dress or outerwear. Describe mach'y and price. John Makan Panosian, 25 S. Huntington Ave., Boston 30, Mass.

PLANTS & PROPERTIES

Put Your Plant in Plant City, Florida. Be the first to manufacture or wholesale your line in fabulous central Florida. Recent steady growth plus 3,000 new residents each week creating tremendous consumer markets. Plant City, Florida is central for Miami-Jacksonville-Tampa-Orlando. Plant City has two railroads, airport, main highways, cooperative workers. Write for plant sites etc. Plant City Development Committee P. O. Box 1509, Plant City, Florida.

For Sale
1—UNIVERSAL WINDER
Gang Model #50
Purchased 5/10/54 — never used
FS-1874, Textile World
330 W. 42 St., New York 36, N. Y.

Your inquiry will have Special Value . . .

If you mention this magazine when writing advertisers. Naturally, the publisher will appreciate it . . . but more important, it will identify you as one of the men the advertiser wants to reach with this message . . . and help to make possible enlarged future service to you as a reader.

ONE OF THE WORLD'S LARGEST AUCTIONS

7000 LOTS COVERING 4,000,000 SQ. FT. FLOOR AREA

MACHINERY & EQUIPMENT

of the former American Woolen Co.

WOOD and AYER MILLS
LAWRENCE, MASS.

AT PUBLIC AUCTION

MON., TUES., WED., THURS., FRI., JUNE 11, 12, 13, 14, 15, 1956

Commencing at 10:00 A.M. each day————————7000 LOTS LOTS

85 C&K 82 IN. W3 LOOMS—212 C&K 72 IN. W3 LOOMS—6 WHITIN MDL. FW3 WORSTED SPINNING FRAMES—WHITIN 180 SPDL. WORSTED SPINNING FRAME—48 WARNER & SWASEY SERIES M2380 AND M2350 PIN DRAFTERS—3 ABBOTT 160 AND 120 SPDL. AUTO. QUILLERS—P&W 66½ IN. 4 BLADE CENTURIAL SHEAR—P&W 80½ IN. 2 BLADE DIXIE SHEAR—4 GESSNER 72 IN. SEMI-DECATURS W/HYTOR PUMPS—HUNTER 42-72 IN. PIN TENTER DRYER—HUNTER CONTINUOUS CLOTH WASHER—R&L 2 SECTION CONTINUOUS CLOTH WASHER—GESSNER 72 IN. FULL DECATUR—9 D&F 54X60 IN. 2 CYL. WORSTED CARDS—2 GESNER MDL. PD HIGH SPEED PRESSES—12 R&L AND HUNTER 6 FT. PIECE DYE KETTLES—2 R&L 10 FT. PIECE DYE KETTLES—2 R&L 12 FT. PIECE DYE KETTLES—FRANKLIN 250 LB. 37 SPDL. PRESSURE PACKAGE DYE KETTLE—468 PLATT BROS., P-S AND OTHER FRENCH AND BRADFORD SYSTEM REDUCERS, FINISHERS AND DRAWING FRAMES ETC.—23 D&F PINLESS DRESSING REELS—17 FOSTER MDL. 30 TUBE WINDERS—7 ABBOTT MDL. 101 TUBE WINDERS—19 JACK SPOOLERS—4 Abbott alum. lined 18 spdl. package dye kettles; 17 respoolers; SACM 400 and 232 spdl. spinning frames; 102 C&K 82 in. Verybest looms; 19 P-S 200 spdl. Dolly twisters; 16 Foster Mdl. 102 winders; 43 Draper 220 spdl. ring twisters; 19 Hunter 26B and other fulling mills; ARLINGTON 4 BOWL 72 IN. CONTINUOUS CRAB; C&M 66 in. cloth spreading and rolling machine; Gessner 71 in. padding machine; 6 Abbott and Universal winders; 7 P&W 2, 3 and 4 blade 66½ in. shears; P&W 80 in. 2 blade shear; 10 D&F double jackspoolers; 108 P-S 200 spdl. 3½ in. ga. ring spinning frames; 108 Collins 200 spdl. ring twisters; BIRCH 78 IN. M. D. SCUTCHER; 2 cloth rolling and weighing machines; Woonsocket 72 in. 14 roll napper; 3 Pornetz and Wilson yarn conditioners; 3 Windle doubling and winding machines; Gessner 72 in. hydrolizer; 2 GESSNER 66 IN. SPOT PROOFING MACHINES; 4 Vigereaux printing machines; 21 rubber roll cloth washers; 3 S-L hot air slashers; Sargent 48 in. mixing picker; 162 P-S AND OTHER GILL BOXES; 66 P-S 80 spdl. reducers; 11 P-S 68 spdl. reducers; 10 D&F 120 spdl. filling winders; Brandy 111 in. cone duster; 15 D&F tape condensers; 16 ABBOTT WORSTED SLUB DRYERS; 6 Hunter 48 in. wool openers; 2 Sargent burr pickers; 2 Entwistle high speed warpers; 36 D&F 400 spdl. mules; 45 T-W, P-S AND OTHER NOBLE COMBS; 20 Smith punchballers; RODNEY-HUNT 32 IN. SAMPLE PIECE DYE KETTLE; Hunter 78 in. carbonizer; 6 SCOURING TRAINS; 11 backwashers; 2 Barber-Colman lease packing machines; 11 Entwistle electric warpers; Bramwell feeds; Scott yarn and cloth testers; Roy traverse grinders; R&L s.s. size tank; steel and wood process tanks; new card clothing; pumps, motors, squeeze rolls; apron feeds; PIPE, MACHINE, WOODWORKING AND PIN, SHEET METAL AND BLACKSMITH SHOPS; OFFICE EQUIPMENT AND SUPPLIES.

Sale to take place upon the premises and will be sold piece by piece. Immediate delivery. A 25% deposit will be required, other terms at sale. Inspection daily to time of sale. Illustrated and descriptive catalog upon request.

Sale under the management of
EDWARD KROCK INDUSTRIES
37 Harvard St., Worcester, Mass.

HENRY S. ANTHONY & CO.—AUCTIONEERS

219 Central St. *Tel. GLenview 2-4991* LOWELL, MASS.

4—FLETCHER 16' WEBBING LOOMS
Duel 16 hook heads, 16 space battens. Motorized.

1—BARBER-COLMAN TYING MACHINE
Model L-S

40—BJ MODEL WHITIN TWISTERS
Brand New—144 spindles—6" gauge—4½" ring

1—1945 HERMES SHEARING MACHINE
Complete with rolling and sewing attachments.

24—
REBUILT FLETCHER
8' LOOMS
Reconditioned, cam motions, motorized. Battens to specication.

$600,000 MODERN THROWING PLANT
Sold as individual items

21—1951 HIGH SPEED U. S. TEXTILE REDRAWS
60 spindles per machine. 7" traverse. Spindleless type.

64—U. S. TEXTILE 1950 & 1951 FACE DRIVE HEADLESS PKG. D.D. TWISTERS
8" gauge, 160 spindles per machine. Complete with spearators, 2 motors per machine. 440V, 3 phase, 60 cycle. Magnetic starters. Complete with nylon-type bobbins and all accessory equipment.

1—1950 H&W YARN CONDITIONER
Steam. RT2 Model. Complete with all instruments.

40—UNIVERSAL #250 SIZING MACHINES
Machinery in like-new condition. Complete with viscometers, stainless steel piping, sizing tubes and trucks.

2—LATE-TYPE H&W YARN CONDITIONERS LARGE SIZE
1—Late Lydon Yarn Conditioner.

50—LATE-TYPE NYLON CONERS
- Stainless steel emulsion rolls and troughs
- Pineapple attachments
- L-drive
- Gear gain
- Motorized in units of 12 spindles

3—ATWOOD MODEL 110 1948 1 LB. TWISTERS
208 spindles each. 6" gauge—2 motors per machine—Nylon spindle bobbins available with machines.

1—HI-SPEED 84" SIPP EASTWOOD 8 YD. WARPER
1—800 END 1948 SIPP EASTWOOD MAGAZINE CONE REEL

12—FLETCHER 15'8" LOOMS
Reconditioned, cam motions, motorized. Battens to specification.

All items subject to prior sale. Write, Phone, or Wire for Further information. This is only a partial listing.

Wm. Rabinowitz & Sons
TEXTILE MACHINERY, BOBBINS & SUPPLIES
214 - 222 Hamilton Street Phone HEmlock 3-7497 3-7498 Allentown, Pa.

LIQUIDATION SALE

3—V.V. 60" S.S. Tensionless Jiggs 60" & 72" S.S. Werner Jiggs
2—50" S.S. Totally Enclosed Jiggs
1—Detwister Unit, with suction, L-6 Nash Pump, Mt. Hope Guides, draw rolls, etc.
1—3-roll Hydraulic Calender, 68" Beamers, 66" & 54"
1—8' and 1—14' S.S. Dye Becks
1—8 Fan National Loop Dryer
1—Butterworth 5-roll Calender, 120", 2 steel rolls, 3 Composition rolls, Mycock Expander, Foxwell Guiders, Overhead Swing Folder.
1—Venango 150 lb. S.S. Paddle Dye Machine, totaly enclosed.
1—L-4 Nash Pump & Motor
1—50" Werner S.S. Jigg
1—Merrow Sewing Machine, Table & Motor
1—100", 2 rubber roll Hydraulic Padder

A & M BLANK CO., INC.
301-313 East 22nd St. (at 7th Ave.) Paterson, N.J.
SHerwood 2-1367-8

MILLER MACHINERY CO.
66 RAILROAD AVE. PATERSON, N. J.
Tel. Sh 2-5467-8
Textile Machinery and Supplies
BOUGHT AND SOLD
Warpers • Winders & Quillers • Looms

HOSIERY MACHINES
used and rebuilt
KNITTERS — RIBBERS — LOOPERS
CYLINDERS — DIALS — TRANSFERS
HOSIERY NEEDLES AND PARTS
JOS. BRESANI
N. W. Cor. Hancock & Somerset Streets
Phila. 33, Pa.

FOR SALE
1—Used Hurricane 4 Section Loop Dryer.
1—9'6" S.S. Lined Dye Beck Silk Type.
Commercial Dyers & Bleachers Ltd
95 Port Royal Ave Montreal, Canada

36 ATWOOD 10B's & FLETCHER DOUBLERS

30 ATWOOD D.D. UPTWISTERS ½ Lb. Pkg.—2 Motors
1—HIGH PRESSURE STEAM BOX
150—UNIVERSAL 250B SIZING MACHINES
100—UNIVERSAL CONERS
3' 30' Taper "L" Drive-Gear Box "A"—Oiling & Pineapple Attachment—S.S. Troughs
35M—All Aluminum TAKE-UP SHAFTS 3¼"T.x4" Hx2¼, BBL.
200,000—FIBRE HEAD SPOOLS 4½"T. X 3-7/8"H.
BOBBINS—SPOOLS—QUILLS—ALL Sizes & Types

PENNSYLVANIA SPOOL & EQUIPMENT CO.
425 LEHIGH ST. ALLENTOWN, PA. Phone 3-7545

IF THERE IS
Anything you want
that other readers of this paper can supply
OR—
Something you don't want
that other readers can use, advertise it in the
Searchlight Section

Announcing

effective June 15, 1956

Our Telephone Number
will be changed to

GEneva 4-4041

DUNN CORPORATION
P. O. Box 4306, East Providence, R. I.

For
Card Stripping
VACUUM PUMPS
The finest name in Rebuilts
AMERICAN

354—14 x 5 Ing. ER-1
360—14 x 8 Oliver
496—14 x 7 Worth. HB
823—18 x 7 Worth. HB
1292—22 x 9 Ing. ES-1 (NEW)
1292—22 x 9 Penn. 7AT

For Air Moistening
Rebuilt Compressors

283 CFM 35 psi 10 x 7 Ing. ES-1
290 CFM 75 psi 10 x 9 Ing. ES-1
410 CFM 20 psi 12 x 7 Gardner RX
634 CFM 60 psi 14 x 11 Ing. ES-1
659 CFM 20 psi 15 x 9 Ing. ES-1
729 CFM 50 psi 15 x 11 Ing. ES-1
940 CFM 30 psi 17 x 11 Ing. ES-1
1016 CFM 55 psi 17 x 13 CP-T
1410 CFM 35 psi 20 x 13 CP-T

LIKE NEW
1665 CFM 40 psi 175 HP—3-60-550 V
Ing. Rand XRE 16-16 x 12

American Air Compressor Corp.
Dell & Tex Streets — North Bergen, N. J.

FOR SALE

300—Steel adjustable loom beams. Overall length 67½", barrel diameter 4-¾", distance between flanges 49-50", flange diameter 20". All in first class condition. Apply

FS-1330, Textile World
330 W. 42 St., New York 36, N. Y.

BRASS **PIN-PLATES** All Sizes

PUT YOUR PIN TENTERS IN TIP-TOP CONDITION

SEND US OLD PLATE FOR QUOTATION

● Pins in Stainless, Monel, Plain Steel

All Diameters Any Length

SOUTHERN TEXTILE WORKS
P. O. BOX 406 ANDERSON, S. C.

FOR SALE
MODERN TEXTILE MACHINERY

The former PRENDERGAST MILL
Bridgeton, R. I.

1—Toledo Cloth Scale, Style #2900A.
1—Andrews & Goodrich Cloth Conditioner, roller type.
1—Parks & Woolson Semi-Decater, 72", L4 Pump.
1—Yorkshire 2 Bowl Crab, 72" wide.
1—Woonsocket Brusher & Sander, 66½" wide, motor.
1—Miller Pin Tenter Dryer, 70" wide, electric guides.
2—Parks & Woolson Cloth Perches, ceiling type, 72" wide.
1—Birch Doubling & Tacking Machine.
1—Ingersoll-Rand Air Compressor, Type ERI, 9x6, 10 HP.
1—Ingersoll-Rand Air Compressor, Type 30, 5x3x3½, 5 HP.
1—South Bend Lathe, 36" bed, 10" swing, ½ HP motor.
36—C&K W3 Looms, 82", 25 harness dobby, motor.
8—C&K W3 All Purpose Looms, 82", 25 harness dobby, motor.
24—Spdls. Hacoba Automatic Filling Winders—1954.
12—Spdls. Britoba (Mischamp) Filling Winders—1951.
1—H&W Yarn Conditioner, RI, single truck.
1—Voelker 66" High Speed Press, motor driven.
1—Rodney Hunt Fulling Mill, 6 string, 25 HP motor.
1—Rodney Hunt S.S. Washer & Dye Kettle, 6 string.
1—Rodney Hunt 8 string Dolly Washer.
1—Birch Detwister and Birch Detacker.
1—Gessner 72" Scutcher & Vacuum Extractor, 25 pump.

The former AMES TEXTILE CORP.
Southbridge, Mass.

2—Allen Hi Speed Warpers, 54¼", Mag. Cone Creel, 480 ends.
2—American Laundry Cascade Cypress Washers, 6 compts.
100—C&K W2 Looms, 82", 20 harness dobby, motor.
1—Bachman-Uxbridge Gentle Air Slasher, 80", West Pt. Boxes—1950.
8—Saco-Lowell Tape Drive Twisters, 200 spdls ea., 3" ri, 4" & 5" ga.
2—Riggs & Lombard S.S. Encl. Dye Boxes, 6' wide.
1—Birch Cypress Washer, 82" wide, 4 squeezers—1946.
1—Riggs & Lombard Rope or Open Washer, 4 compts., 54" pneu. sq.
1—David Gessner Hi-Speed Press, 66" wide, complete—1948.
2—Parks & Woolson Centurial Shears, 66", 3 blades, motor driven.
2—Gessner & Parks & Woolson Semi-Decaters, 72" & 66", 1948-53.

Other Machinery For Sale

1—Worthington Air Compressor 19x13, 100 HP motor.
2—Abington Card Stripping Systems for 150 cards.
1—Amco Humidifier System, Model #5 & #6 Heads, 1200 heads.
40—Del. Saco-Lowell Controlled Draft Drawing, 4 del.—1949.
2—Saco-Lowell Lap Winders, Model #37—1949.
1—Barber-Colman Hi-Speed Quiller, 30 spdls—1949.
50—C&K C6 Looms, 25 harness, 4x1, box—1946.
11—Werner Stainless Steel Dye Jiggs, 70" wide—1953.
1—Winsor & Jerauld Tenter Frame, 80' long x 60" wide.
19—H&B Cotton Cards 40", doffer, No. 110-120 wire.
20—Lowell 40" Cards, 27" doffers, 12" coilers.
16—Atwood Uptwisters, Model #110, 208 spdls, 2 lb. Headless Pkg.
1—Johnson 7 Drum Slasher, 62" headway—1949.
12—Whitin Superdraft Roving Frames, Model G8, 8x4, 72 spdls—1949.
2—Edmos Circular Knitting Machines, Model EEM, 17"-24" dia.
2—Hinnekens Stainless Steel Dye Boxes, 12' wide—1948.
1—Greenville Stainless Steel Slack Rope Washer—1948.
1—Stainless Steel Pneumatic Wringer—1948.
2—Tennant Floor Conditioning Machines.
1—Economy Bale Press 61 x 32 x 65.
1—United Miller, 2 HP motor.
1—Stockbridge Shaper, 2' stroke, 3 HP motor.
6—Transformers, 50 KV, 220 volts.
1—Reilly RO Boiler,—1949, 60,000 lb. SPH.
1—Cochran Deareating Heater, 150,000 lb. SPH—1944.
2—G. E. Steam Turbo Generators, 1000KW 1—condensing; 1—non condensing, 2300 volts.

Republic
TEXTILE EQUIPMENT COMPANY
40 Worth Street, New York 13, N. Y., U. S. A.
REFINANCING • APPRAISALS • PURCHASE & SALE
LIQUIDATIONS OF MILL PROPERTIES • PURCHASE AND SALE OF USED MACHINERY

FOR SALE!

1—Smith-Drum 4-Port Dye Package Dryer, 1951
2—Smith-Drum 300# Dye Package Carriers
1—Standard Fabricators 100# S. S. Pressure Extractor
2—Standard Fabricators 300# Dye Package Carriers
1—Progressive Thread-Yarn Tube Label-Banding Machine
1—Universal #44 Roto-Coner, 20 spindles, C. I. Drums, 1954
17—Abington Machine Co. 40" Card Strippers

JAMES E. FITZGERALD
10 Purchase St. *Tel. OS 8-5616* Fall River, Mass.

FOR SALE—TEXTILE EQUIPMENT

PREPARATORY

1—Sturtevant #6 Cast Iron Stock Blower, Ball Bearing, V-belt drive, 15" connections.
12M—Giant Package Mule Bobbins, New, mfgd. by A.P.T. Co., tan fibre, 14" long.
20—Schlumberger Wool Combing Machines, Segment width 310 m/m.
1—P&S 60" Single Cylinder Staple Card, double doffers. Cylinder pinned, otherwise metallic wire.
1—D&F Woolen Card, 3 Cyl., 48 x 60" dia., Bramwell Feed, Peralta, 80 End Tape Condenser.
1—D&F Perfection 60" Card Clothing Tension Device.
2—Hussong Stock Dye Kettles, 316—S.S., 600 lb. and 300 lb. cap., 1948.
4—Sargent, P&W., Pit Feeds, 48", 78", complete with Reeves drives and motors.
1—Harwood 72" large capacity Feed, type 563, with transverse conveyor apron.
3—B.S. Roy and D&F. 60" traverse Card Grinders, 12-18" dia. wheels, solid and fillet type.
3—D&F Staple Openers for synthetic Stocks, B.B. cyls., 42" dia. x 21-½" face.
1—P&S Rocar Wool Opener 72", double cylinder, 1950 Model.

FINISHING

2—Simpson type Batchers, 50", 80", single, double roll.
1—Van Vlaan, 60" Button Breaker, 19 rolls, tension let-on, batcher takeup.
2—Reeves Drives, horizontal type, size 0 and 2, B.B. w/motors.
1—P&W Despecking Machine 89" w/ scray, folder, exhaust fan and motor.
1—P&W Semi-Decatur, cyl. 72" face x 60" dia., 1949, guiders, pump, motors and hoist.
1—Gessner Semi-Decatur, Cyl. 75" face x 36" dia. with motor, Vacuum Pump and controls.
1—P&W Measuring, Doubling & Winding Mach., 66", Springfield model w/ motor.
1—R&L S.S. Piece Dye Kettle, totally enclosed, 70", 12 string, insulated, deep tub.
1—R&L S.S. Piece Dye Kettle, 70", 8 string, open top, high splash sides.
3—D&F single acting Nappers, 14 roll, 72", 80", complete w/folder, motor.
1—P&W double acting Napper, 24 B.B. rolls, folder, scray, motor.
1—P&W Davidson Hi-Speed, 3 blade Shear, 66½", air guiders, folder, mtrs.
2—C&M Tacking Machines 87", 94", Sewing head and folder.
1—Tenter Frame, pin type, 72"x18' w/ guiders, swing folder, motor drive.

McDOWELL ASSOCIATES INC.

General Offices 41-E. 42 Street
New York City 17, N. Y.
Phone: Murray Hill 2-7417

Warehouse No. 1 N. Front
Dock & Water Sts., Hudson, N. Y.
Phone: Hudson 8-3211

LOW PRICED TEXTILE EQUIPMENT
WORSTED, DYEING, FINISHING, RAW STOCK OPENING

RALEIGH, N. C.

1—SACO-LOWELL—84" Slasher, 4 Sections Warp Compressor
1—ANDREWS and GOODRICH—Dryer, Adjusto speed
4—JAMES HUNTER FULLING MILLS—4 Piece SS Bottom
1—REEVES—Variable speed drive with speed change motor
1—ENTWISTLE-HI-SPEED WARPER—72" Drum Type
1—GESSNER—Fully automatic Decator Foxboro control, cooling stand, Pump complete
5—ROLLS of LEADED CLOTH—hard and soft good condition
1—J. E. WINDLE—CLOTH WINDER—Open and closed Roll 62"—Serial #224, Measuring and weighing, complete
1—PARKS & WOOLSON—72" Cloth Measuring Machine

PHILADELPHIA

1—SCHOFIELD Automatic Duster
3—PROCTOR and SCHWARTZ—Single Drum Condensers, Model 442, 18 x 36"
1—PROCTOR and SCHWARTZ—8 Foot Cone Duster, Model #10
1—SMITH and FURBUSH Cone Duster
1—HOLDSWORTH—2 head 4 fold Delivery Intersecting Gill Box, Serial #50-39—Excellent Condition
1—SARGENT RAW STOCK DRYER, 7 Units, good condition. Stock turnover and cooling sections
1—SARGENT SCOURING BOWL, with Pneumatic squeeze Rolls
1—Pit feed with Retractable Pin Beaters and variable speed drive
1—HUNTER Mechanical squeeze rolls, Model G
4—MULHOUSE—60" Metallic Worsted Card, 1-½ Cylinders, Wire in excellent condition.

Machinery lists and photographs of additional equipment available:

FRED WHITAKER COMPANY

RIDGE AVENUE & SCOTTS LANE — PHILADELPHIA 29, PENNA.

TEXTILE AUXILIARIES

WE BUY, SELL, APPRAISE, AND LIQUIDATE

We offer for immediate SALE high quality Finishing Machinery located at the Guyan Mills in Pawtucket, Rhode Island.

2—W & J—70', 90' Tenter Frames, late style, complete with Housing and Electric Eye Weft Straighteners, D.C. Motors and Generators.
1—70' Textile by 60" Tenter Frame, same as above.
1—115"—2-Roll Mangle; 1—120"—2-Roll Mangle; 1—90"—3-Roll Mangle.
1—Set of 31 - 90" x 23" Copper Dry Cans.
1—60" Roll Extractor.
1—Weisner Rapp—All Stainless Steel—10' - 12 Compartment Slack Rope Washers, with 10' x 12" Pneumatic Set, Rubber Squeeze Rolls, Motorized.
1—60" Morrison Horizontal Roll Extractor, complete with Motor, Rail and Chain Fall.
1—78" Hunter, 15 Ton (Water Pressure) Hydraulic, 2-Roll Padder, Rolls 18" diameter.

We have in stock for immediate delivery A.C. and D.C. motors from 1 H.P. to 100, also spare tenter frame chains, Rubber Calender Rolls, etc.

Office and Warehouse 146 West River Street — For further information write or Telephone: — *Telephone* Dexter 1-9650 Dexter 1-8837

PROVIDENCE, R. I.

STAVE & KESSLER

• *TEXTILE MACHINERY*
• 106 KEARNEY ST., P. O. Box 1611
• PATERSON, NEW JERSEY
• Phones: AR 4-7486 SH 2-4958

WE BUY AND SELL
TEXTILE MACHINERY
THROUGHOUT THE WORLD!
GEORGE W. EGAN
"The Machinery Man Known Everywhere"
WOONSOCKET, R. I. - Phone POplar 2-3258

FOR RATES OR INFORMATION
About Classified Advertising

Contact The McGraw-Hill Office Nearest You.

ATLANTA, 3
1321 Rhodes-Haverty Bldg.
WAlnut 5778
W. McMICKLE

BOSTON, 16
350 Park Square
HUbbard 2-7160
H. J. SWEGER

CHICAGO, 11
520 No. Michigan Ave.
MOhawk 4-5800
W. HIGGENS

CINCINNATI, 37
1915 Rockingham Ave.
REdwood 1-4537
W. GARDNER

CLEVELAND, 15
1510 Hanna Bldg.
SUperior 1-7000
W. SULLIVAN

DALLAS, 2
Adolphus Tower, Main & Akard Sts.
PRospect 5064
G. JONES

DETROIT, 26
856 Penobscot Bldg.
WOodward 2-1793

LOS ANGELES, 17
1125 W. 6th St.
MAdison 6-9351
G. FRUHLING

NEW YORK, 36
330 West 42 St.
LOngacre 4-3000
R. LAWLESS
S. HENRY
D. COSTER
R. HATHAWAY

PHILADELPHIA, 3
17th & Sansom St.
RIttenhouse 6-0670
H. BOZARTH
E. MINGLE

ST. LOUIS, 8
3615 Olive St.
JEfferson 5-4867
W. HIGGENS

SAN FRANCISCO, 4
68 Post St.
DOuglas 2-4600
W. WOOLSTON

We offer for sale in private liquidation the machinery of

The PURITAN MILLS

(Formerly American Woolen Co.)

PLYMOUTH, MASSACHUSETTS

14—**WHITIN MODEL BJ TWISTERS YEAR 1942**—4" Gauge, 3" Ring. Direct motor driven by 15 H.P. Motors 3/60/550 and complete with individual Spindle Knee Brakes and Stop Motions.

6—**WARP COMPRESSOR CO., 40" HI-SPEED SPOOLERS**—40" Traverse, 40 Ends. One yard drums and complete with Stop motion and 80 End (40 Live Ends) Magazine Creels. Year 1944.

14—**GROOVED ROLL 40" INSPECTION SPOOLERS** with Spindle Creel, 40 Ends.

114—**WOOLEN CROMPTON & KNOWLES W-3 AUTOMATIC CONVERTIBLE 82" LOOMS,** Friction Let-off, Worm Take-up, 4 Bank Electric Stop Motions, High Cloth Roll Take-up, Pick Counters, Chain Racks and complete with 1½ HP Motors. Loom Orders Nos. from 14000 to 15136. Looms take Shuttle 18" Long, 2⅛" Wide, 1-11/16 High. Bobbins 9½".

72—**WOOLEN CROMPTON & KNOWLES W-3 AUTOMATIC 4 X 1,** Non-Convertible 82" Looms, Friction Let-off, Worm Take-up, 4 Bank Electric Stop Motions, Hi-Cloth Roll Take-up, Pick Counters, Chain Racks and complete with 1½ HP Motors. Loom Order Nos. 14384 to 16180. Looms Take Shuttle 18" Long, 2⅛" Wide, 1-11/16" High. Bobbins 9½".

2—**UNIVERSAL ROTO-CONERS YEAR 1948, 120 SPINDLES,** Steel Grooved Traverses, Arranged for 1⅝" Dye Springs and Tubes. Direct motor Driven and complete with Bobbin Apron conveyors.

1—**FOSTER 102 CONER 100 SPINDLE.** Serial No. 567. Arranged for Wood Tubes.

1—**FOSTER MODEL 30 WINDER, 24 SPINDLES**—12 Spindles arranged for Wood Cones and 12 Spindles for Wood Tubes.

1—**DAVIS & FURBER 92" PINLESS REEL.** Reel is Motor Driven by Variable Speed Motor with electric Brake. Beamer is D&F 1947 Heavy duty. Motor Driven 3 Speeds. Hackstand is late type with Electric Stop motion.

8—**D&F—92" PINLESS DRESSING REELS,** complete with Beamers, Hackstands and Spool Creels.
SAMPLE ROOM CONTAINS 11—4 X 4 BOX LOOMS 48" R.S. and 3 Sample Dressing Reels with bobbins stands.

2—**ENTWISTLE HACKSTANDS.** Complete with Electric Stop Motions and Yardage counters.

17—**FRANKLIN PROCESS PACKAGE DYE MACHINES,** Complete with Pumps, Motors and Dye Tanks. Machines are Wood, Monel and Stainless Steel. Capacity of Machines are from 1 pound to 500 pounds.

3—**PROCTOR & SCHWARTZ TRAY DRYERS FOR PACKAGES,** 1200 pounds capacity.

2—**KNITTING MACHINES MOTOR DRIVEN,** for making Dye Spring Socks.

1—**FLETCHER WHIRLWIND 60" EXTRACTOR WITH STAINLESS STEEL BASKET** and complete with Safety Cover, Timer and Automatic Brake. Motor is Side-mounted 10 HP 550/3/60.

1—**TOLHURST 60" BELT DRIVEN EXTRACTOR**—Copper Basket.

4—**RIGGS & LOMBARD NO. 65 — 8 STRING FULLING MILLS,** 14" Face Rubber Rolls, Bottom completely Stainless Steel Lined, Cheeks, Traps and Crimp Boxes are Stainless Steel.

4—**JAMES HUNTER NO. 20 FULLING MILLS,** Rubber Rolls, Traps and Crimp Boxes are Stainless Steel.

1—**JAMES HUNTER 8 FT. CLOTH WASHER, YEAR 1950.** Rubber Rolls, Pneumatic Pressure. Stainless Steel Doffing Roll and fittings. Direct motor driven with motor mounted on top of Washer and driven thru V-belts. Start and stop stations in front and back of Washer.

4—**JAMES HUNTER 100" CLOTH WASHERS, YEAR 1945.** Rubber Rolls, Belt Driven.
COMPLETE SOAP SYSTEM WITH TANKS, PUMPS AND METERS.

2—**JAMES HUNTER ROPE TYPE SOAPERS.**

1—**RIGGS & LOMBARD YEAR 1950 — 2 FT. TOTALLY ENCLOSED STAINLESS STEEL DYEKETTLE,** with Adjustable Hump Reel and Dial Thermometer. Direct motor driven.

1—**JAMES HUNTER 8 FT. TOTALLY ENCLOSED DYEKETTLE, YEAR 1950.** Kettle has Herringbone Reel and is direct motor driven. Tag Temperature control is included.

2—**RIGGS & LOMBARD 6 FT. STAINLESS DYEKETTLES YEAR 1946.** Kettles have Knurled Hump Reels and are direct motor driven. Tag temperature controls are included.

2—**RIGGS & LOMBARD 6 FT. STAINLESS DYEKETTLES AS ABOVE — YEAR 1940.**
DYEHOUSE SCALES, STAINLESS STEEL PAILS, DIPPERS AND DYE MIXING CANS.

1—**DAVID GESSNER VACUUM EXTRACTOR COMPLETE WITH GESSNER SCUTCHER** and L-6 Nash Vacuum Pump with 30 HP Motor & Silencer.

1—**JAMES HUNTER UNIFLOW CLOTH DRYER, YEAR 1945.** Two Section 8 Pass. Takes cloth from 50" to 74". Complete with Blake cloth Guiders, Selvage Knock-off, Overfeed, Taylor Control for Temperature, motor driven Fans and exhauster. Dryer driven by Reeves Motor Drive. Panel Board and small compressor are included.

1—**DAVID GESSNER FULL DECATUR YEAR 1945.** Complete with Foxboro Electronic Timer and Temperature controls.

1—**DAVID GESSNER FULL DECATUR. BOILER ON THIS MACHINE NEW IN 1950.**

1—**DAVID GESSNER SEMI-DECATUR.** Cylinder 72" x 36". Includes Nash Pump and good Apron.

1—**CURTIS & MARBLE SEMI DECATUR 24"** Cylinder. Complete with Nash Pump and Apron; and steaming mantle.

1—**PARKS & WOOLSON 3 BLADE DAVIDSON SHEAR 66" WIDE.** Complete with Turning Device, Electronic Seam-jumper, High cloth folder and Flock Collecting system.

1—**P&W — 4 ROLL CLOTH BRUSH.** 3 Rolls Bristle 1 roll Wire. 66" Wide.

1—**BIRCH BROS. 4 BOWL CRAB.** Wood Tank Rubber Rolls.

1—**DAVID GESSNER HIGH SPEED MODEL PD CLOTH PRESS COMPLETE WITH GESSNER HYDRALIZER PUMP AND TRAVELLING SCRAY.**

1—**WINDLE COMBINATION CLOTH FOLDING AND OPEN ROLL WINDING AND** measuring machine. Handles cloth 68" Wide. Motor driven.

1—**TOLEDO YARDAGE AND OUNCE SCALE.**
COMPLETE MACHINE SHOP — INCLUDING LATHES, MILLERS, ETC.

Complete machine shop, including lathes, millers, etc. Quantity of Office equipment including adding machines, comptometers Munroe calculators, desks, chairs, steel files. Dial system for inter-plant communication, auto call system. Also available are fluorescent lights, mill supplies, grain scales, new loom parts and the usual type of articles found in mill of this kind.

CALL WRITE WIRE

J. LAURENCE LEWIS

P. O. BOX 82 **Volunteer 2-4545 or Mill Plymouth 412** **LEXINGTON, MASS.**

FOR SALE

Two 62" McCREARY BRUSH MACHINES

with individual motor attachments, starting systems, protective guards, one brand new, the other hardly used. $300. ea. F.O.B. Mill.

MANCHESTER KNITWEAR, Inc.

80th near 71st Avenue Glendale, N. Y.

For Sale

Saco-Lowell Ring Trap Twister, 100 spindles, new 3½" vertical rings, 5" gage, 5½" traverse, 5 H.P. 550 V. May be seen in operation.

The NOVELTY CORD & TASSEL CO.
Brooklyn 5, N. Y. Phone MAin 2-3224

FOR SALE

4—D & F, 60 x 60 all iron cards complete with feed, breast center drawer feed and tape condenser. Also, 12, 60 x 60 breakers complete with arches and frames.
8—D & F, 60 x 60 all iron card breakers, will also sell as doffers.
1—James Hunter, 80" cloth padder.
2—Riggs Lombard, 6' stainless steel dye kettles, flat bar reel.
1—Riggs Lombard, 4' stainless steel dye kettle, combination bar and hump reel.
1—Hunter, 26B Fulling Mill.
1—Foster, Model 57 doubler, 100 spindle.
1—P & W, 86", 4 cylinder brushing machine with motor.

ABOVE OFFERED SUBJECT TO PRIOR SALE OR WITHDRAWAL

DUNN CORPORATION

Mailing Address
P O Box 4306
Providence, R.I.

Offices located at
172 Taunton Ave.
East Providence, R.I.
EA 1-7410

BIALEK'S BEST BUYS

THROWING MILL LIQUIDATION

8—Sipp skein to cone winders. 1949-1950; 3-5 lb. package
7—Foster #76 single-end thread sizers
12—Atwood "5B"
4—8 fly reelers

64—Universal #50 cone winders
35—Foster cone winders
All winders with pineapple attachment, emulsion troughs
54—Atwood ½ lb. uptwisters

BOBBINS, SPOOLS, TRUCKS, TRAYS, LAB EQUIPMENT

VELVET FINISHING EQUIPMENT:

MUELLER 24-ROLL NAPPERS (80"), MUELLER SHEARERS (64"), MUELLER PEGGER, WAXING— ALL PURCHASED NEW IN 1953.

THEODORE BIALEK & CO.

6704 EMPIRE STATE BLDG.
NEW YORK 1, N. Y.
Longacre 3-4978-9

11-20TH AVE.
PATERSON, N. J.
Lambert 3-5886-7

"WANTED TO BUY"

NOBLE COMB CIRCLES

Three large circles:
22 pins per inch, length of pins 1⅞", set over 3", number of rows 7 or 8, brass size 9/16" x 3¾".

Three large circles:
45 pins per inch, length of pins 1½", set over 1⅞", number of rows 11, brass size ⅜" x 3".

Six small circles:
49 pins per inch, length of pins 1⅜", set over ⅝", number of rows 6, brass size ⅜" x 1¾".

Six small circles:
25 pins per inch, length of pins 1¾", set over 13/16", number of rows 6, brass size ½" x 1 1/16".

FRED WHITAKER COMPANY
Ridge Avenue & Scott's Lane
Philadelphia 29, Pa.

WANT TO BUY
Electric Baling Presses
All Makes, Any Condition
Write, Wire or Phone BAldwin 3-8686
Fertik & Company
9th & Tioga Sts., Philadelphia 40, Pa.

June's SPECIAL VALUE

1 Foster #102 WINDER—100 Spindles 6" Traverse for 5/8" Dye Tubes! $2500

3 Sections #44 Universal Roto Coner 9°15' Paper Cones
2 Fidelity Adjustable Single Spider Skein Reels
1 #45 Universal Single Spindle Unit Mounted on Pedestal—M.D.
2 #6-C Universal Single Spindle Units Mounted on Pedestal—M.D.

STANDARD MILL SUPPLY COMPANY
1064-1080 Main Street *Phone: PAwtucket 3-1534* Pawtucket, R. I.

WANTED—DYESTUFFS

Chemicals — Pigments — Solvents
Plasticizers — Plastics — etc.
By-Product — Wastes — Equipment
CHEMICAL SERVICE CORPORATION
80-10 Beaver St. New York 5, N. Y.

DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.
Established 1919

FRANK FYANS

MACHINERY CO., INC.

formerly A. F. Machinery Co., Inc.

SUITE 420 ACADEMY BLDG. • P. O. BOX 16
FALL RIVER, MASS. • TEL. 5-7432 - 5-7228

WANTED

GOOD USED STEEL ELEVATED WATER TANKS — SELL US YOUR ELEVATED TANK, IF NO LONGER NEEDED.
WE BUY — SELL — MOVE — ERECT NEW — USED STEEL ELEVATED WATER TANKS AND PROVIDE PAINT OR REPAIR MAINTENANCE FOR THESE STRUCTURES.

UNIVERSAL CONSTRUCTION COMPANY
1129 Udell St. INDIANAPOLIS 23, INDIANA

WANTED
AIR POROSITY TESTER
Frazier, Gurly or U. S. Testing Type
To Measure Air Flow Through Cloth in Accordance with A.S.T.M. Methods
STEHLI & CO., INC.
1372 Broadway, N. Y. 18, N. Y. WI 7-3000

We Buy, Sell, Appraise, and Liquidate

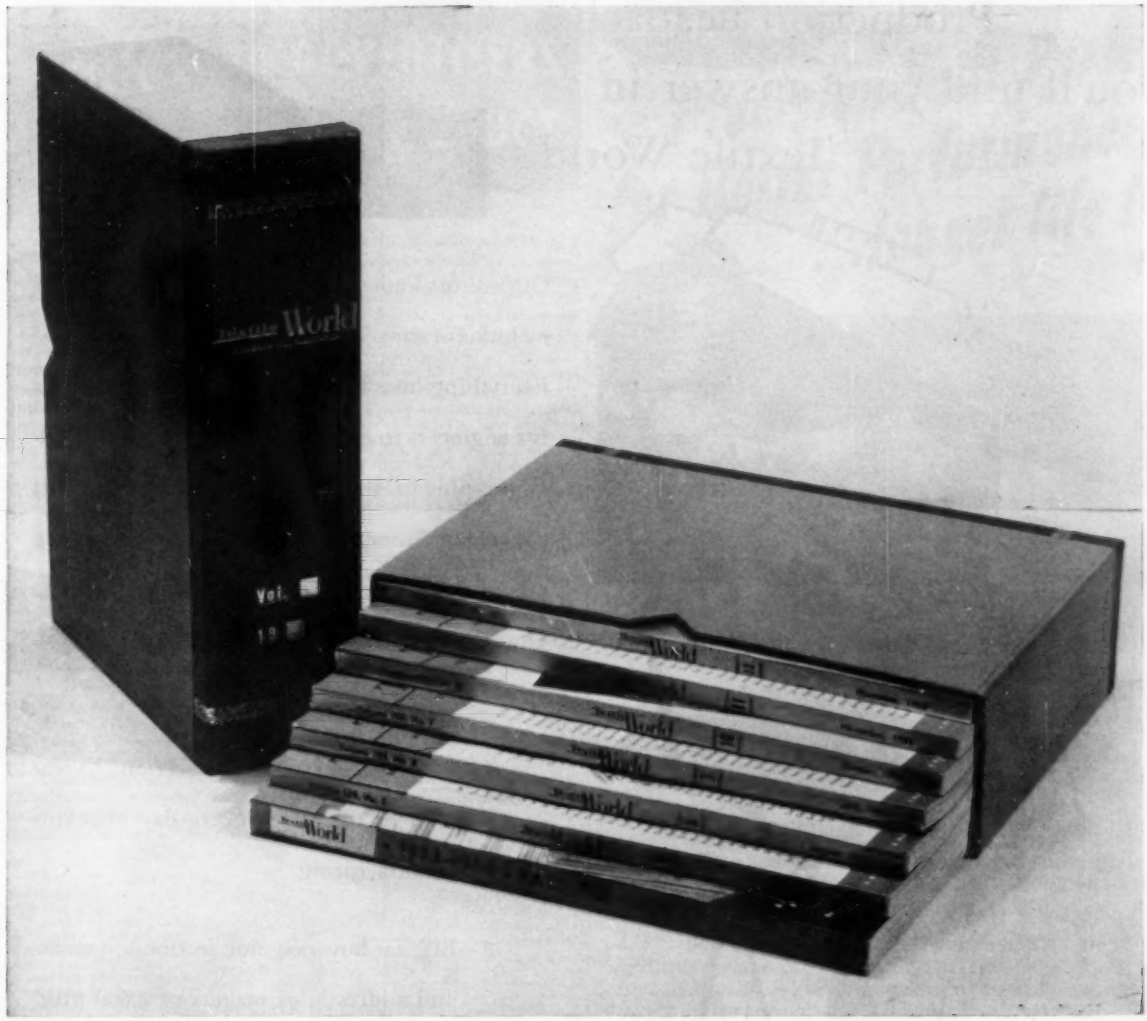
We offer for immediate Sale—Dyeing & Finishing—at our warehouse

1—Birch Bros. 60" Vacuum extractor with beam let-off device, 2 rubber squeeze rolls, Ceiling swing Folder, PIV variable speed drive with motor.
6—Morrison Dye Jiggs 50" face, with 550 motor driving 3 Jigs, stainless steel.
1—50" Morrison 3 Roll Calender Lever & Weight set with 10 HP 550 volt motor.
2—Merrow Sewing Machines 60ABBY and 60 ABB-1 Butt Seamers, complete.
10—Reeves variable speed drives from No. #2 to No. 66#6 all class A ratio 10 to 1.
4—60" Carbomatic Gas Burners complete with controls.

PETER JASWELL AND SON INC.
Consulting Engineers and Manufacturers Agents
1741 FALL RIVER AVE., SEEKONK, MASS., Telephone • CHestnut 1-2309
"ON ROUTE 6 BETWEEN FALL RIVER AND PROVIDENCE"

— WANTED —
ABINGTON WOOLEN CARD STRIPPING SYSTEM
Capable of handling 3 to 6 sets of cards.
W-1622, Textile World
330 W. 42 St., New York 36, N.Y.

WANTED
TIGER, HEAVY DUTY. GOOD CONDITION.
WARREN FABRICS CO., INC.
West Warren, Mass.



KEEP PAST ISSUES "ALIVE"...

with this HANDY FILE

A complete set of past issues of TEXTILE WORLD represents the finest source of technical information on textile manufacturing to be found anywhere. Every issue contains information designed to help the man in the mill with his job.

Now you can keep a half year (6 copies) of past issues "alive" in your business or home library . . . protected from soiling, tearing, and wear in a convenient, easy-to-use, file especially designed for TEXTILE WORLD. Or, a full year (including Fact File), may be kept in two files. You will find your past issues a valuable encyclopedia on textile manufacturing. An index to the contents of the previous 12 issues appears in TEXTILE WORLD once a year.

These durable Jesse Jones files (will support 50 lbs.) come with a rich Kivar cover that is washable and that looks like leather. The 16-carat gold lettering makes them fit companions for the most costly bindings.

Reasonably priced, too. Only $2.50 each, 6 for $13.00, POSTPAID. Add $1.00 postage for orders outside U.S. Satisfaction unconditionally guaranteed or your money back.

For prompt shipment of these attractive files use coupon to the left.

JESSE JONES BOX CORPORATION

Jesse Jones Box Corporation, Dept. TW
P. O. Box 5120
Philadelphia 41, Pa.

Please send me, postpaid, _____ TEXTILE WORLD files.
I enclose: ☐ Check for $_____. ☐ Bill Me

Name .....

Address .....

City ..... State .....

Production headaches? Cheer up. Chances are you'll find your answer in Textile World's FACT FILE *

Our editors know *their job*. Each year they try to include information helpful to you in *your job!* Everything here from handy everyday formulas for engineers to cleaning systems for lights. 360-pages-plus of answer-answers-answers in this convenient, compact reference. You're missing a good bet if you don't consult the FACT FILE. Once you've used it, you'll never be without it.

Look, 3-way help . . .

1—Easy-to-get-at reference section . . . the kind of data used every day in textile manufacturing.

2—Big, fat buyers'-guide section . . . names and addresses of makers of 2,600 products purchased regularly by textile mills.

3—Handy, helpful advertising section . . . details and specifications mill men need to select equipment and supplies.

* The FACT FILE is sent to *every* Textile World subscriber in Mid-September

Watch for Textile World's **1956-57 FACT FILE ISSUE**

. . . coming Mid-September

Index to ADVERTISERS Keyed by PRODUCT

A HELP TO YOU. This unique TEXTILE WORLD index, particularly if consulted for two or more consecutive issues, affords a valuable source of information on the latest products and services available to the textile industry. Its comprehensiveness is the result of the fact that TEXTILE WORLD, having the largest paid circulation and highest readership of any textile-mill magazine in the world, carries the largest volume of advertising.

HOW TO USE. First, look in the table below and find the letter that designates the class of supply or service in which you are currently interested. Then consult in the index the page numbers that are followed by that letter.

A. Air Conditioning, Air Cleaning.
B. Building Construction and Maintenance, Paints, Yard Equipment, Water Supply.
C. Chemicals and Dyestuffs.
D. Cleaning Equipment.
E. Dyeing, Finishing, and Cloth Room Equipment and Supplies.
F. Electrical Equipment—Motors, Controls, Lighting, Etc.
G. Fibers, Yarns, Mills, Finishing Companies.
H. Fluid Handling—Compressors, Pumps, Piping, Valves, Fittings.
K. Instruments. Measuring, Metering and Weighing Apparatus.
L. Knitting-Mill Equipment and Supplies.
M. Lubricants and Lubrication Equipment.
N. Management Services—Factors, Consulting Engineers, Insurance, Personnel Facilities, Plant Sites, Etc.
O. Materials and Components for Machinery and Equipment.
P. Materials Handling, Packaging, and Shipping Facilities.
Q. Power Generation and Transmission (see also Electrical Equipment).
R. Weaving and Warp Preparation Equipment and Supplies.
T. Yarn-Production, Twisting and Winding Equipment and Supplies.

This index is published as a convenience to the reader. Great care is taken to make it accurate, but TEXTILE WORLD assumes no responsibility for errors or omissions.

Adams, Inc.	234	L
Alemite Div., Stewart-Warner Corp.	136	M
Alleghany Ludlum Steel Corp.	245	O
Allen-Bradley Co.	3rd Cover	F
Allis Co., The Louis	27	F
American Moistening Co.	12	A
American Pulley Co., The	236	Q
American Viscose Corp.	14-15	P
Andrews & Goodrich, Inc.	60	E
Appleton Machine Co.	214	E
Armco Steel Corp.	215	O
Armour & Co.	67	C
Armstrong Cork Co. (Cots)	28-29	T
Armstrong Cork Co. (Loom Supplies)	[illegible]	T
Ashworth Bros. Inc.	24	T
Atkinson, Haserick & Co.	128	T
Atlantic Steel Co.	207	O
Aurora Pump Div., The New York Air Brake Co.	202	H
Bahnson Co.	230	A
Barber-Colman Co., Textile Div.	237	R
Bemis Bro. Bag Co.	204	P T
Black-Clawson Co., The	45	T
Black Light Corp. of America	226	E K T
Booth Co., Benjamin	189	T
Branson Co.	41	G
Bristol Co.	233	K
Bryant Chem. Corp.	132	C
Buckeye Cellulose Corp.	167	G
Buffalo Forge Co.	249	A
Caldwell Co., Inc., W. E.	248	B E
Celanese Corp. of America, Chemical Div.	74	C
Yarn Div.	56-57	G
Century Electric Co.	39	F Q
Chemstrand Corp.	44	G
Cities Service Oil Co.	149	M
Cleveland Tramrail Div., The Cleveland Crane & Eng'g. Co.	175	P
Clipper Belt Lacer Co.	10	Q
Cole Mfg. Co., R. D.	194	B E
Colonial Rubber Co.	242	E
Columbia-Southern Chem. Corp.	177	C

Gastonia

Precision-built Parts for Better Performance ...longer life!

Get MORE production at LOWER cost with Gastonia Cylinders

GASTONIA Spinning, Twister, Spooler and Quiller Cylinders are dynamically balanced and scientifically tested to assure top performance for continuous, high-speed production.

Like all other GASTONIA Products, these Cylinders are precision-built from the finest materials by skilled workmen having many years of practical experience.

For the manufacture, repair or rebuilding of Cylinders to your specifications . . . call GASTONIA.

Gastonia TEXTILE SHEET METAL WORKS, INC.
Gastonia, North Carolina

A sheet metal works serving textile mills

CARD SCREENS Standard type rib or perforated—cut and assembled on special precision-built jigs.

CYLINDERS Dynamically balanced for better performance—reduce vibration to an absolute minimum.

ASPIRATORS Precision manufacturing methods assure proper shape and balance of Aspirators and Aspirator Dampers.

LAP CONDUCTOR TINS
WASTE CHUTE COVERS
WASTE CHUTES
SLIVER PANS
BACK TINS

COMBER RENEEDLING Top Combs, Half Laps and Winder Guide Combs precision-rebuilt of top quality materials to manufacturer's standard specifications. Imported English needles of tempered high-tensile steel used exclusively.

For more information, write direct or use Reader-Service post card. 263

The Laurel Leaf

BUSINESS MAGAZINE EDITION

For softening gelatin sizing formulations . . . try LAURELTEX C! This product is manufactured from the finest saponifiable oils and contains no mineral oil. It is readily dispersible in water and forms very stable size solutions. What's more, it will not turn rancid in storage or on the yarn, and it is easily removed in a regular scour. Whether your interest is in sizing warps or in soaking skeins or cakes, you will find that LAURELTEX C will do an excellent job for you. Next time you need softening oil, try LAURELTEX C. You'll be glad you did.

•

There is no need for you to risk losing your cotton yarns to mildew! Laurel MILDANT RX is a highly concentrated mildew arrestor designed for use in emulsion troughs or after treating baths. Applied in sufficient quantity to yarns, it will protect them and assure that they will arrive at your customer's plant in the same condition as they were shipped. And, Laurel MILDANT RX will also protect them against uncertain storage conditions. Why not start using Laurel MILDANT RX in *your* processing? It is a fine insurance policy.

•

Here is a water soluble, sizing protection especially prepared for use on nylon, Orlon and other synthetic yarns and fabrics. Laurel SIZE D will produce a clear, tough, stiff, yet flexible film which makes it very desirable for sizing nylon filament yarns, and the finishing of all types of ribbons and fabrics. It is compatible with many other finishing materials and may be softened or otherwise modified if desired. Laurel SIZE D is readily soluble in water with which it may be easily diluted for use, or removed in a regular scour. It will not affect shades or whites and it is very resistant to ageing. Order some today.

Laurel Brand

Laurel SOAP MANUFACTURING CO., INC.
TIOGA, THOMPSON & ALMOND STS., PHILA. 34, PA.

Warehouses: Paterson, N. J., Chattanooga, Tenn., Charlotte, N. C.

Continental Can Co., Shellmar-Betner Flexible Pkg'g. Div.	69	P
Continental Diamond Fibre Div., The Budd Co., Inc.	220	P
Corn Products Refining Co.	235	C
Crane Co.	62	H
Crompton & Knowles Loom Works	13	R
Crompton-Richmond Co., Inc.	232	N
Crucible Steel Co.	185	O
Dary Ring Traveler Co.	212	T
Davis & Furber Mach. Co.	182	T
Dayton Rubber Co., The Holfast Div.	157	E
Textile Div.	16-17	RT
Deutscher, Spinnereimaschinenbau, Ingolstadt	21	T
Diehl Mfg. Co.	145	FQ
Dobeckmun Co., The	36	G
Dodenhoff Co., Inc., W. D.	141	R
Dolge Co., C. B.	226	B
Dow Chemical Co.	213	C
Draper Corporation	1	R
Eastern Gas & Fuel Assoc.	25	N
Engineered Plastics, Inc.	238	T
Fairbanks Co., The	184	H
Fairbanks, Morse & Co.	198	K
Fairtex Corp.	41	G
Faultless Caster Corp.	178	P
Ferguson Gear Co.	203	Q
Finnell System, Inc.	68	D
Foster Machine Co.	139	T
Foxboro Co., The	199	K
Franklin Process Co.	77	G
Gardner-Denver Co.	66	H
Gaston County Dyeing Mach. Co.	192	E
Gastonia Textile Sheet Metal Works	263	T
Gaylord Container Corp.	181	P
General Dyestuff Co.	205	C
General Electric Co.	70-71	FQ
Goodrich Chemical Co., B. F.	18	C
Graton & Knight Co.	222	R
Guider Specialty Co.	216	E
Gulf Oil Corp.	49	M
Harshaw Chemical Co.	231	C
Harwood & Son, Geo. S.	228	T
Haskell-Dawes Mach. Co., Inc.	200	T
Hayes Industries, Inc.	206	R
Hermas Machine Co.	196	E
Herr Mfg. Co., Inc.	211	T
Hibbert & Co., Ltd., Jos.	48	R
Hungerford & Terry, Inc.	244	B
Hunter Machine Co., James	73	E
Huyck & Sons, F. C. Noone Ind. Fabrics Div.	240	E
Hyatt Bearings Div., General Motors Corp.	161	OQ
Ideal Industries, Inc.	219	T
Industrial Rayon Corp.	23, 193	G
Industrie-Werke-Karlsruhe	265	E
Ingersoll-Rand Co.	6	H
International Business Mach. Corp.	179	N
Intertex Corp.	203	N
Jacobs Northern & Southern Div., E. H.	168	R
Jacquard Knitting Mach. Co., Inc.	2	L
Jenkins Bros.	53	H
Jenkins Sons Inc., M. W.	171	E
Johns-Manville	197	O
Johnson Corp., The	242	H
Johnson Bronze Co.	244	OQ
Jones & Hunt, Inc.	224	E
Jones Box Corp.	261	N

Keever Starch Co. ..... 227 L
Keystone View Co. ..... 246 ..... N
Kidde Mfg. Co. ..... 217, 251 ..... L ..... R
Kuljian Corp., The ..... 246 ..... N

Laurel Soap Mfg. Co., Inc. ..... 264 C
Lazenby Co., The F. A. ..... 228 ..... T
Leighton Machine Co. ..... 186 L
Lewellen Mfg. Co. ..... 202 ..... Q
Link-Belt Co. ..... 7 ..... Q
Loper Co., Ralph E. ..... 246 ..... N
Lunkenheimer Co., The ..... 26 ..... H

Main, Inc., Chas. T. ..... 248 ..... N
Manhattan Rubber Div. ..... 38 ..... Q
Marshall & Williams Corp. ..... 201 ..... E
McBride, Ed. J. ..... 176 ..... R
Metallizing Engineering Co., Inc. .... 240 ..... O ..... Q
Micro Switch, Div. of
Minneapolis-Honeywell Reg. Co. ... 30 ..... F
Minneapolis-Honeywell Reg. Co.
Industrial Div. ..... 195 ..... K
Micro Switch Div. ..... 30 ..... F
Monsanto Chemical Co.
Plastic Div. ..... 221 C
Montgomery Co., The ..... 250 ..... G
Morton Salt Co. ..... 159 C
Mount Hope Machinery Co. ..... 59 ..... E
Muller, Franz ..... 37 ..... E

National Aniline Div.,
Allied Chem. & Dye Corp.
Chemical Div. ..... 33 C
Fiber Div. ..... 64-65 ..... G
New Departure Div. of General
Motors Corp. ..... 11 ..... O ..... Q
Nitrogen Div.,
Allied Chem. & Dye Corp. ..... 163 C
Noone Industrial Fabrics Div.
F. C. Huyck & Sons ..... 240 ..... E
Nopco Chemical Co. ..... 54 C

Oakite Products, Inc. ..... 238 C
Ordnance Gauge Co. ..... 198 L

Parks-Cramer Co. ..... 46-47 ..... A ..... D
Penick & Ford, Ltd., Inc. ..... 196 C
Pneumafil Corp. ..... 187-188 ..... T
Potts Co., Horace T., Speedline
Stainless Steel Fittings Div. ..... 32 ..... H
Procter & Gamble ..... 58 C
Proctor & Schwartz, Inc. ..... 210 ..... E

Raybestos-Manhattan, Inc.
Manhattan Rubber Div. ..... 38 ..... Q
Reeves Division
Reliance Elec. & Eng'g Co. ..... 174 ..... Q
Reiner Inc., Robert ..... 229 L
Republic Steel Corp. ..... 172-173 ..... O
Rhoads & Sons, J. E. ..... 5 ..... R
Ridge Tool Co. ..... 201 ..... H
Riggs & Lombard, Inc. ..... 34 ..... E
Robbins & Myers, Inc. ..... 241 ..... H
Robert & Co. Associates ..... 2nd Cover ..... N
Roberts Co. ..... 9 ..... T
Rohm & Haas Co. ..... 154 C
Rollway Bearings Co., Inc. ..... 243 ..... O ..... Q
Ruppright's Rotary Roof Cooler .... 250 ..... N
Ryerson & Son Inc., J. T. ..... 194 ..... O

Saco-Lowell Shops ..... 22, 134 ..... T
Sandoz Chem. Wks., Inc. ..... 51 C
Scherr Co., Inc., George ..... 248 ..... E
Schweiter Ltd. ..... 40 ..... T
Scragg Ltd., Sydney & E. ..... 130 ..... T

OUR MANUFACTURING PROGRAM INCLUDES:

Overlock Machines	Band-Attaching Machines
Single-Chainstitch Machines	Border-Attaching Machines
Double-Chainstitch Machines	Bag Sewing Machines
Machines for Sewing Elastics	Cylinder Machines

Feed-off-the-arm Seam-Felling Machines "SPECIAL LOCK"

Feed-off-the-arm Flat-Seam Machines "MAUSER LOCK"

INDUSTRIE-WERKE KARLSRUHE
Aktiengesellschaft · Karlsruhe (Germany)

For more information, write direct or use Reader-Service post card. 265

TEXTILE WORLD

Reprints Available

▶ **Reprints of the following articles run in past issues of TEXTILE WORLD are available at the price indicated. To order, write or use the coupon below, stating the titles of the reprints desired. Enclose check or money order payable to TEXTILE WORLD.**

COTTON CRUSHPROOFING — **1 to 15 copies, $1 each; 16 to 30 copies, 75¢ each; over 30 copies, 60¢ each**

A comprehensive report that gives a brief background on crushproofing and explains how cotton fiber reacts to resin finishes, how crushproofing works on cotton, the types of chemicals used, and pointers on applying the finishes.

WOVEN CLOTH DEFECTS — **1 to 15 copies, $1 each; 16 to 30 copies, 75¢ each; over 30 copies, 60¢ each**

A comprehensive series of articles that show each major cloth defect, give its causes, and explain how to eliminate it.

STRETCH AND BULK YARNS—WHAT'S THEIR FUTURE? — **25¢ each, 15¢ in lots of 20 or more**

An up-to-date roundup of new yarns available to mills, their uses and characteristics, and a forecast of developments to come.

HOW TO REDUCE CARD WASTE — **50¢ each, 40¢ in lots of 20 or more**

This report of a one-year six-mill cooperative study shows that card waste can be reduced as much as 3% of lap weight; settings, speeds, and modified assembly are major key factors; and recommended speeds and settings, besides reducing carding waste, produce yarns of equal or better strength and appearance than conventional settings.

HERE'S A QUICK WAY TO IDENTIFY FIBERS — **50¢ each, 40¢ in lots of 20 or more**

A four-step method of fiber identification is described. A full-color chart of identification stains, a solvent chart, and fiber cross sections are included.

HOW TO BE A BETTER SUPERVISOR — **50¢ each, 40¢ in lots of 20 or more**

A series of articles on human relations and the supervisor's dealings with workers. The material tells supervisors how to increase their effectiveness by learning to understand people better. Pointers on how to improve employee morale, get worker cooperation, and reduce labor turnover are included.

CHEMICAL FINISHING TECHNIQUES — **$1 each, 85¢ in lots of 20 or more**

A series of four articles that explain the chemical and physical properties of a number of finishing materials and their applications to and reactions with cellulose and various synthetics.

ENGINEERED TEXTILE DESIGN — **Set of 5 articles. $1.25 per set**

A series of articles of interest to those engaged in practical fabric design or in teaching functional design. One article introduces the all-fiber system, which takes the guess out of how many ends and picks to use in changing to a new fabric. Another shows how to change weight without changing structure. Detailed numerical examples are provided. A discussion of yarn diameters, as the basis of structure, opens the series.

SYNTHETIC-FIBER TABLE — **1 to 15 copies, $1 each; 16 to 30 copies, 75¢ each; over 30 copies, 60¢ each**

Brand-new edition lists by type and name all U. S. yarns and staple fibers in commercial production. Suppliers are listed by type and form of fiber. Valuable related data and a "Terminology and References" section are included. Comparative properties of wool and cotton fibers are shown.

TEXTILE BIBLIOGRAPHY — **25¢ each, 15¢ in lots of 20 or more**

A listing of the important English-language books on textile technology. Twelve-page folder lists more than 1,400 items in 20 categories and includes a directory of publishers.

WOOL-SYSTEMS FLOW CHART — **35¢ each, 25¢ in lots of 20 or more**

New edition shows all the processes in making woolen and worsted fabrics on all yarn systems. Six typical finishing routines are also pictured to cover the main fabric types. The chart includes the manufacture of synthetic and blended fabrics on wool systems.

COTTON-FIBER TABLE — **25¢ each, 15¢ in lots of 20 or more**

Revised edition shows fiber properties and manufacturing performance of the 11 varieties of cotton that make up more than 80% of the U. S. cotton grown. Data given enable mills to save money by selecting the best fiber for the end product.

EDITOR
TEXTILE WORLD
330 West 42nd St.
New York 36, N. Y.

Please send the following TEXTILE WORLD reprints. My check or money order is enclosed.

Quantity	Reprint Title	Cost Each	Total Cost

Name .....

Street .....

City ..... State .....

Simco Co., The	248	E, L, RT
Sinclair Refining Co.	76	M
SKF Industries, Inc.	75	O, Q
Societe Alsacienne De Construction Mecaniques	128	T
Socony Mobil Oil Co., Inc.	20	M
Solvay Process Div., Allied Chem. & Dye Corp.	191	C
Sonoco Products Co.	61	E, T
Southern Shuttles Div., Steel Heddle Mfg. Co.	147	R
Speedline Stainless Steel Fittings Div., H. T. Potts Co.	32	H
Standard Chemical Prods., Inc.	151	C
Steel Heddle Mfg. Co.	147	R
Stephens-Adamson Mfg. Co.	165	O, Q
Stowe-Woodward, Inc.	143	E
Taylor Fibre Co.	52	O
Taylor Instrument Cos.	50	K
Tennant Co., G. H.	8	D
Terrell Mach. Co., The	183	D
Textile Machine Works	78	L
Theiler Corp., H. J.	40	T
Toledo Scale Co.	190	K
Tompkins Bros. Co.	200	L
Torrington Co., The (Bearings)	225	O, Q
Towmotor Corp.	55	P
Turbo Machine Co.	80	T
Unionmatex, Textilmaschinen-Union G.M.B.H.	19	E
US Bobbin & Shuttle Co.	31	RT
U. S. Rubber Co. Mechanical Goods Div.	247	Q
Universal Winding Co.	152	T
Veeder-Root, Inc.	4th Cover	K
Warner & Swasey Co.	63	T
Westinghouse Electric Corp. Lamp Div.	208-209	F
Whitin Machine Works	42-43	T
Wildman Mfg. Co.	239	L
Wolf & Co., Jacques	223	C
Wood's Sons Co., T. B.	180	Q
Yale & Towne Mfg. Co.	72	P

PROFESSIONAL SERVICES

Kuljian Corp. 246
Loper Co., Ralph E. 246
Main Inc., Charles T. 248
Robert & Co. Assoc. Second Cover

CLASSIFIED ADVERTISING
F. J. Eberle, Business Mgr.

EMPLOYMENT OPPORTUNITIES 253

BUSINESS OPPORTUNITIES 254

NOTICES
Auction 255

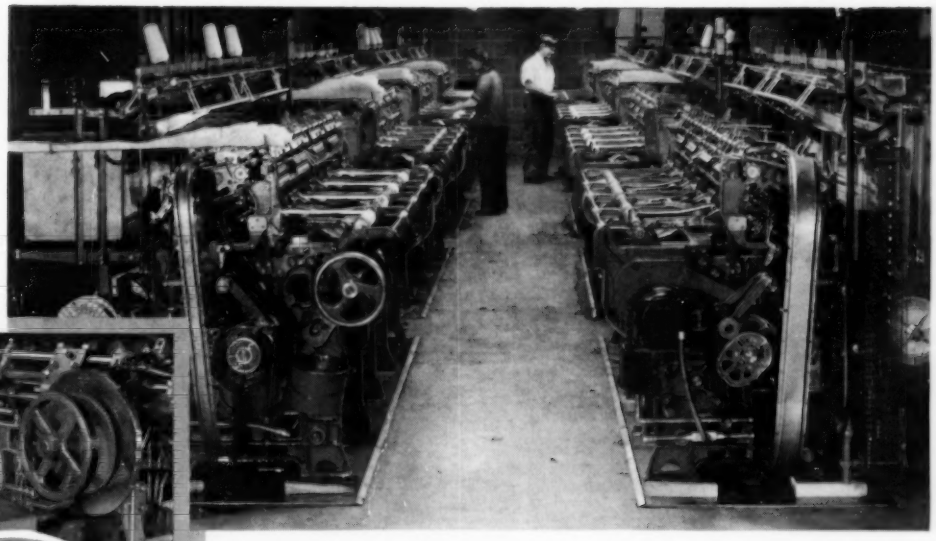
PROPERTY 254

EQUIPMENT
(Used or Surplus New)
For Sale 254-260

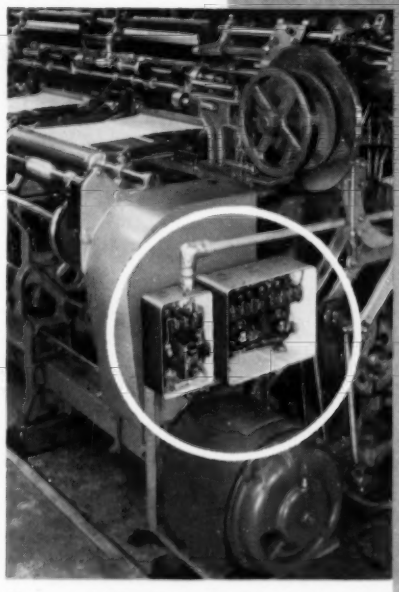
WANTED
Equipment 260
Miscellaneous 260

ADVERTISERS INDEX

American Air Compressor Corp. 257
Anthony & Co., Henry S. 255
Bialek & Co., Theodore 260
Blank Co. Inc., A. & M. 256
Bresani, Joseph 256
Chemical Service Corp. 260
Commercial Dyers & Bleachers Ltd. 256
Dunn Corp. 257, 259
Egan Inc., George W. 258
Fertik & Co. 260
Fitzgerald Textile Machinery, James 257
Fyans Machinery Co., Inc., Frank 260
Hartford Rayon Co. 253
Industrial Products of America. 254
Jaswell & Son Inc., Peter 260
Lewis, J. Lawrence 259
Machinery Sales Corp. 254
Manchester Knitwear, Inc. 259
McCaffrey & Son, Inc., L. J. 254
McDowell Associates Inc. 258
Miller Machinery Co. 256
New England Products Co. 260
Novelty Cord & Tassel Co., The. 259
Pennsylvania Spool & Equipment Co. 256
Perry Equipment Corp. 254
Rabinowitz & Sons, Wm. 256
Raymond Service Inc., Chas. P. 253
Republic Textile Equipment Co. 257
Southern Textile Works 257
Standard Mill Supply Co. 260
Stave & Kessler 258
Stehi & Co, Inc. 260
Textile Auxiliaries 258
Universal Construction Co. 260
Warren Fabrics Co., Inc. 260
Whitaker Co., Fred. 258, 260

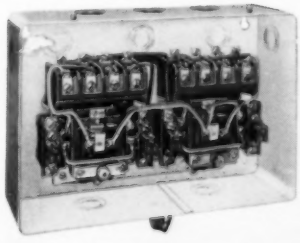


RIGHT — Rows of Reiner Twin-Knitter nylon stocking knitting machines which use A-B starters.



Close-up of Allen-Bradley manual and automatic starters for starting and speed-changing the knitter motors.

Bulletin 609 manual motor starter with overload breakers. Built also as a loom switch.



Bulletin 715 two-speed solenoid starter for automatic speed-changing during the operation of Reiner knitters.

MANUAL AND AUTOMATIC CONTROLS for TWIN-KNITTER HOSIERY MACHINES

Reiner hosiery machines, shown above, are "factory equipped" with Allen-Bradley manual and automatic starters for controlling the operating speeds of the two-speed knitters.

Allen-Bradley starters are popular with textile plant operators because they are so trouble free. Their remarkable simplicity of design means fewer parts; fewer parts mean fewer troubles; fewer troubles mean better quality of the finished textiles, and with less down time.

Allen-Bradley solenoid starters have ONLY ONE MOVING PART . . . the simple solenoid plunger that operates the moving contacts. The contacts require no maintenance. They are good for millions of trouble free operations. Just install them and forget them.

A wide variety of Allen-Bradley switching components, such as push buttons, limit switches, pilot lights, relays, and other auxiliary devices will satisfy every need of the machinery builder. You will find everything listed in the Allen-Bradley Handy Catalog. Send for your copy—today!

Allen-Bradley Co., 120 W. Greenfield Ave., Milwaukee 4, Wis.
In Canada—Allen-Bradley Canada Ltd., Galt, Ont.

A-B Quality

ALLEN-BRADLEY

SOLENOID MOTOR CONTROL

QUALITY

For speedy service on

VEEDER-ROOT COUNTERS

...Send them here...to the Southern Headquarters

Been figuring on sending some counters in for a tune-up? *Well, now's the time to do it.* Veeder-Root's Southern Headquarters . . . with its completely equipped set-up for service and its full staff of top technicians . . . is all set to take care of all your needs, big or little, *right now.*

Service is just as fast as you ask for it. And the quality of the work is what you always expect . . . *and get* . . . from Veeder-Root. So just pack up your counters and send them to Veeder-Root Inc., Greenville, S. C. The address is Box 297. Or if you're coming over the road, we're just six miles from Greenville on the Spartanburg Highway.

VEEDER-ROOT INCORPORATED

HARTFORD 2, CONN. • GREENVILLE, S. C.

Chicago 6, Ill. • New York 19, N. Y. • Montreal 2, Canada
Offices and Agents in Principal Cities

. . . and here's why it's wise to make sure all your New Machines are equipped with NEW VEEDER-ROOT COUNTERS . . .

Modern Veeder-Root Counters . . . for looms, frames, knitting machines and all types of textile mill equipment . . . are built with unmatched Veeder-Root know-how and quality to give accurate facts-and-figures through years of trouble-free service. Count on Veeder-Root for *closest Countrol* of production and uniformity. Write Veeder-Root for all your counter needs.

2-3-4 Convertible Counters for looms, frames, knitting machines, etc.

Loom Cut Meters for controlling uniform cuts of cloth.

Vary-Tally Multiple Unit Reset Counters for inventory, inspection, and 1,001 other hand-counting jobs.

Double-Wheel Linear Counter for indicating lengths in feet, yards, etc.

Box 297, Greenville, S.C. Telephone Greenville 3-1371